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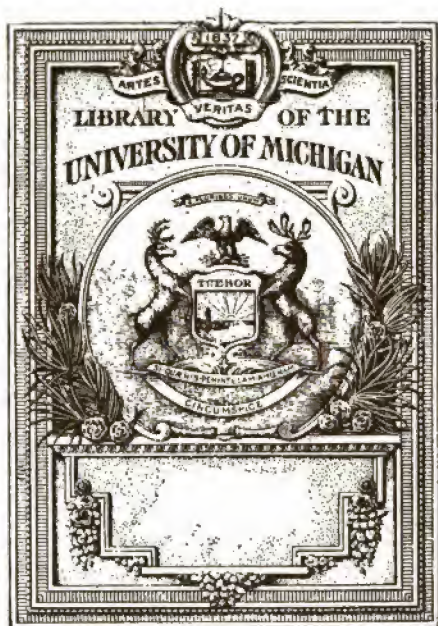
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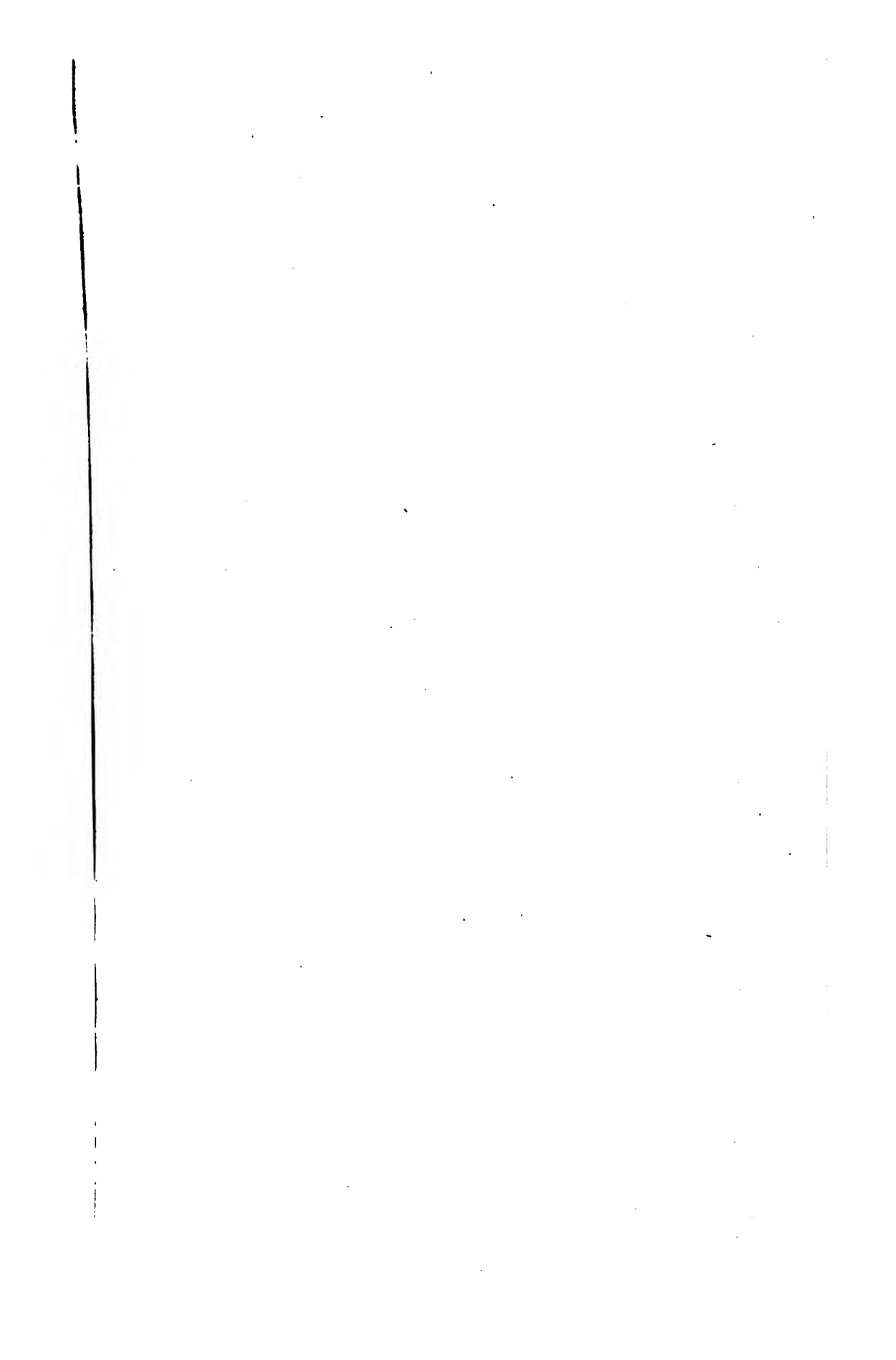
VENEZUELA:
A COMMERCIAL AND INDUSTRIAL
HANDBOOK

BUREAU OF FOREIGN AND DOMESTIC COMMERCE



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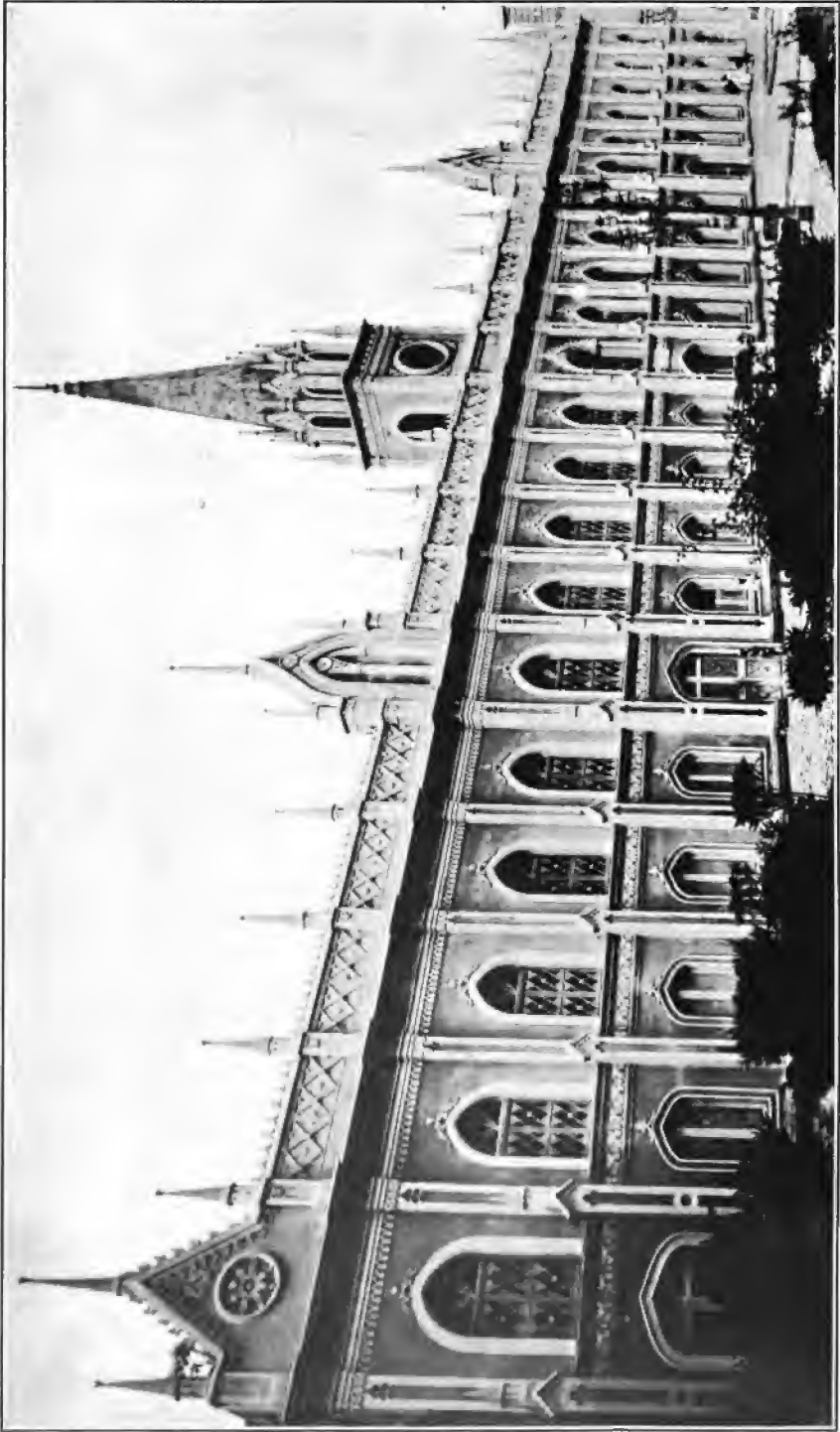


FIG. 1.—CENTRAL UNIVERSITY OF VENEZUELA, CARACAS.

DEPARTMENT OF COMMERCE

U.S. BUREAU OF FOREIGN AND DOMESTIC COMMERCE

JULIUS KLEIN, Director

SPECIAL AGENTS SERIES—No. 212

VENEZUELA

A COMMERCIAL AND INDUSTRIAL HANDBOOK

WITH A CHAPTER ON THE DUTCH WEST INDIES

BY

P. L. BELL

Trade Commissioner



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CONTENTS.

	Page.
Letter of submittal.....	xv
Introduction.....	1
General economic position.....	1
Language.....	2
Weights and measures.....	3
Currency.....	3
Postage.....	5
Telegraph, cable, and wireless service.....	6
Geography, topography, and climate.....	9
Geographic position—Area and boundaries.....	9
Topography.....	9
Mountain groups.....	9
River systems.....	12
The great plains.....	14
Climate and rainfall.....	15
Population and living conditions.....	17
Statistics of population.....	17
Lack of immigration.....	17
Centers of population and commercial districts.....	18
Racial characteristics.....	21
Indian tribes.....	21
The Negro element.....	22
Foreign colonies.....	22
Economic and social conditions.....	23
Purchasing power of the population.....	24
Living conditions.....	24
Residences of wealthier classes.....	25
Servants and wages.....	26
Rents.....	26
Cost of food.....	26
Miscellaneous expenses.....	27
Homes of the poorer classes.....	27
Resorts and amusements in Caracas district.....	28
Conditions in small towns and on ranches and llanos.....	28
Progressive tendencies.....	29
Commercial development.....	31
Labor conditions.....	32
Education.....	35
National finance.....	37
National Treasury.....	37
Venezuela's position as stated by Minister of Finance.....	37
National budget for 1920-21.....	42
Agriculture.....	43
Zones of production.....	43
Lack of population in agricultural areas.....	44

Agriculture—Continued.	Page.
Governmental efforts for improvement of agriculture.....	44
Use of agricultural machinery.....	45
Introduction of tractors.....	45
Duty on agricultural equipment.....	46
Statistics of imports.....	46
Promising field for American sales.....	47
Principal agricultural products.....	48
Coffee.....	49
Importance and general character of industry.....	49
Prices and grades.....	50
Statistics of exports.....	51
Effect of coffee market on general economic conditions.....	52
Cost of production.....	54
New areas of coffee trees set out.....	54
Movement for better distribution of crop.....	55
Effect of exchange situation.....	55
Cacao.....	55
Tobacco.....	58
Grades of Venezuelan tobacco.....	58
Production and domestic consumption.....	59
Export statistics.....	61
Local cigarette factories.....	62
Venezuelan market for American cigarettes.....	63
Cotton.....	64
Sugar.....	67
Rice.....	67
General phases of agriculture—Exportation of foodstuffs.....	69
Land laws of Venezuela.....	70
Colonization contract made in 1920.....	71
Regions suitable for development.....	74
Regulations governing concessions for lumbering.....	75
Law on forests and waters.....	75
Government aids to agriculture.....	75
Fiber resources.....	76
Tanning materials.....	77
Mining.....	79
General survey of resources and operations.....	79
Legislation and regulations—Bureau of Mines.....	80
Mining code.....	80
Course of mining development.....	80
Decree of September 19, 1914.....	80
Regulation of October 9, 1918.....	81
Aspects of activity in oil and coal.....	81
Capitalization of certain companies.....	82
Ownership and control of miscellaneous minerals.....	82
Acquisition of mining claims other than coal or oil.....	82
Acquisition of mining claims by foreigners.....	84
Right of discovery.....	84
Size and form of claims.....	84
Free ground between claims.....	85
Term of concession title.....	85
Mineral deposits of free public use.....	85
Causes of cancellation of title or concession.....	85
Water rights.....	86

CONTENTS.

V

Mining—Continued.	Page.
Payments to the Government.....	86
Formation of mining companies.....	87
Right to prospect and explore for minerals.....	87
Magnesite deposits of Margarita Island.....	88
Petroleum	92
Location of oil fields—Quality of deposits.....	92
Difficulties retarding development.....	94
Competition between British and American interests.....	94
Caribbean Petroleum Co.....	95
Colon Development Co.....	98
Venezuelan Oil Concessions (Ltd.).....	98
British-Controlled Oilfields (Ltd.).....	99
Bermudez Co.....	100
Pauli Concession.....	100
Compañía Petrolera del Tachira.....	101
North Venezuelan Petroleum Co. (Ltd.).....	101
Maracaibo Oil Exploration Co.....	101
Colombian Petroleum Co.....	101
Venezuela Oilfields Co. (Ltd.).....	102
British Equatorial Corporation (Ltd.).....	102
Various American companies.....	102
Oil land not under concession.....	102
Refinery at Curaçao.....	103
Petroleum law of Venezuela.....	103
Taxes—Future of industry.....	104
Live stock and cattle raising	106
Survey of development.....	106
Cattle-raising areas of the country.....	106
Climate of the llanos.....	107
Feed for the cattle: Natural grasses, etc.....	108
General conditions.....	108
Exports of cattle from Venezuela.....	109
Foreign investment in cattle in Venezuela.....	110
Venezuelan salted meat in Trinidad.....	111
Fishing industry	113
Manufacturing	115
Caracas and commercial district	118
General considerations.....	118
City of Caracas.....	118
Location—Physiography of surrounding country.....	118
Area and population.....	119
Climate.....	119
Attractive appearance of city—Character of buildings.....	119
Sanitary measures instituted.....	119
Public water supply—Sewerage system.....	120
Bridges—Parks—Theaters—Hospitals.....	121
Foreign colony.....	122
Hotels and pensions.....	122
Communication facilities in city.....	123
Railways of Caracas and vicinity	124
Caracas & La Guaira Railway.....	124
Central Railway of Venezuela.....	126

Caracas and commercial district—Continued.

	Page.
Railways of Caracas and vicinity—Continued.	
Gran Ferrocarril de Venezuela.....	127
Macuto Coastline Railway.....	128
Proposed new lines.....	128
Roads and highways of Caracas district.....	128
Effect of topography.....	129
Enumeration and description of roads.....	130
Notes concerning Great Western Highway.....	133
Mountain and coast trails.....	133
Port of La Guaira.....	135
Location—Climate—Population.....	135
Suburbs of Maiquetia and Macuto.....	135
Character of harbor.....	136
Wharves, piers, and warehouses.....	136
Cargo-handling capacity of the port.....	137
Fuel for steamers—Facilities for repairs.....	138
Industries at La Guaira.....	138
Steamship service.....	139
Port regulations regarding passengers and their baggage.....	139
Statement of tonnage movement—Imports and exports.....	140
Port of Carenero.....	142
Location of port—Character and products of territory served.....	142
Carenero Railway.....	142
Harbor of Carenero.....	143
Imports and exports at Carenero and Higuerote.....	144
Coastal region east of Carenero.....	144
Points west of La Guaira—Plans for new seaport.....	144
Port of Ocumare de la Costa.....	145
Commercial territory tributary to Caracas.....	145
Port of Guanta and city of Barcelona.....	146
Guanta, Barcelona & Naricual Railway.....	146
Harbor conditions at Guanta—Exports and coastwise traffic.....	147
Coal fields of Naricual.....	148
Extent of coal zone—Important veins discovered.....	148
Analysis and characteristics of Naricual coal.....	149
Cost per ton, placed on board at Guanta.....	150
Coal mines at Unare.....	150
Formation of Naricual fields.....	150
Official report on mines owned and operated by Government.....	151
Coal deposits outside of Naricual basin.....	152
General description of "Oriente" territory.....	153
Roads and highways of Cumana-Carupano district.....	156
Port of Cumana.....	157
Development—Population—Industries.....	157
Cumana & Carupano Pier & Tramway Co.....	158
Harbor and port works of Cumana.....	159
Navigation—Imports and exports.....	160
Port of Carupano.....	161
Harbor and port works.....	161
Navigation—Imports and exports.....	163
Rio Caribe—Cristobal Colon—Cano Colorado.....	164
Statistics of coastwise traffic.....	164
Venezuelan Navigation Co.....	165
Commercial position of Caracas.....	166

CONTENTS.

VII

Caracas and commercial district—Continued.	Page.
Methods of trade, credit terms, and progressive tendencies	167
Industries of Caracas and vicinity	170
Produce for Caracas market	170
Sugar industry	171
Dairying	171
Miscellaneous manufactures—Bases of Venezuelan industry	172
National cement factory	172
Rope and sack factory	173
Glass factory	173
National match factory	173
Chocolate and candy factories	173
Breweries—Tiling, mosaic, and cement-pipe factory	174
Cigarette factories	174
Cotton factories	174
Shoe shops—Furniture shops—Miscellaneous activities	175
Wearing apparel	176
Manufacture of soap	177
Tanning	177
Liquor factories—Starch factories—Machine shops and foundries	178
Companies listed on Caracas Bourse	178
Industrial, professional, and commercial statistics	179
Maracaibo commercial district	181
Location and territory	181
Topography	183
Climate	184
Health conditions	185
Population: Distribution by States, districts, and capitals	186
Cities and towns—Commercial distribution and trade routes	187
Maracaibo	187
Other towns in State of Zulia	189
Towns and routes in State of Tachira	189
Towns and routes in State of Merida	191
Towns and routes in State of Trujillo	192
Economic possibilities of Andean States	192
Characteristics of inhabitants	192
Living conditions—Modern improvements	193
Travel conditions	193
Freight costs	195
Effect of road building on markets for goods	196
Salesmen's routes	196
The port of Maracaibo	197
Ocean steamship service	197
Lake boats	197
Harbor and dock improvements	198
Coastwise traffic of Maracaibo	198
Cucuta, Colombia, and its trade with Maracaibo	198
Agriculture in Maracaibo district	200
Area of cultivation	200
Coffee	201
Grades and prices	201
Distribution of production	202
Exports from Maracaibo	203
Coffee production and market conditions, 1920-21	204

VIII

CONTENTS.

Maracaibo commercial district—Continued.	
Agriculture in Maracaibo district—Continued.	Page.
Cacao.....	205
Sugar.....	206
Survey of development.....	206
Sugar estates and their production in 1920.....	206
Effect of high and low prices.....	209
Corn.....	209
Wheat.....	210
Potatoes.....	210
Fruits.....	210
Coconuts.....	210
Rice.....	210
Hat fiber.....	210
Cotton.....	211
Hides and skins.....	211
Forest products.....	212
Mining.....	213
Asphalt resources.....	213
Coal mining.....	214
Deposits on island of Toas.....	214
Deposits of River Limon district.....	214
Proposed coal port of Castilletes.....	217
Railways.....	217
Gran Ferrocarril de La Ceiba.....	218
Gran Ferrocarril del Tachira.....	218
Ferrocarril de Santa Barbara a El Vigia.....	219
Outlook for future.....	220
Industries.....	221
Banking.....	222
Foreign bank branches.....	223
American Mercantile Bank.....	223
Banco de Maracaibo.....	224
Banco Comercial de Maracaibo.....	224
Aspects of recent banking business.....	224
Business houses and commercial methods.....	225
Foreign trade of Maracaibo.....	227
Trade by countries.....	228
Principal exports.....	228
Exports invoiced for United States.....	229
Statistics of imports.....	230
Importations by parcel post—Coast traffic.....	231
Conclusions and recommendations.....	232
Puerto Cabello and Valencia commercial district.....	233
Location and territory.....	233
Topography and climate.....	233
Characteristics of inhabitants.....	235
Population: Distribution by States, districts, and capitals.....	235
Cities and towns—Commercial distribution and trade routes.....	237
Valencia.....	237
Montalban.....	239
Nirgua.....	239
Yaritagua.....	240
San Felipe.....	240

CONTENTS.

IX

Puerto Cabello and Valencia commercial district—Continued.

Cities and towns—Commercial distribution and trade routes—Con.	Page.
Guigue.....	240
Towns east of Valencia.....	240
Towns in State of Cojedes.....	240
Guanare and Barinas.....	241
Barquisimeto.....	241
Coro and Capatarida.....	242
Puerto Cabello.....	242
Tucacas and Chichiriviche.....	243
La Vela de Coro.....	245
Agriculture	245
Area of cultivation.....	245
Labor conditions.....	247
Excess production and future increase.....	248
Methods of cultivation.....	250
Cotton.....	251
Rice.....	252
Tobacco.....	253
Coffee.....	254
Cacao.....	255
Other agricultural products.....	256
Forest products.....	257
Mining and petroleum	257
Copper.....	257
Gold.....	259
Petroleum.....	259
Coal.....	259
Manufacturing industries	261
Factories of Puerto Cabello.....	261
Factories of Barquisimeto.....	262
Factories of Valencia.....	262
Cottonseed-oil industry.....	263
Live stock.....	264
Transportation	266
Puerto Cabello and Valencia Railway.....	266
Bolivar Railway.....	268
Coro and La Vela Railway.....	269
Highways.....	270
Trails.....	271
Waterways.....	271
Statistics of foreign trade.....	271
Commercial methods.....	273
Extent of trade and volume of business.....	274
Tendency of trade with United States.....	276
Ciudad Bolivar commercial district	278
Location and territory.....	278
Topography.....	278
Survey of Territory of Amazonas.....	281
Climate—Flood stages of lower Orinoco.....	284
General survey of State of Bolivar.....	285
Ciudad Bolivar.....	286
River port of San Felix.....	287
Falls of the Caroni—Water-power rights and related projects.....	288

Ciudad Bolívar commercial district—Continued.	Page.
Transportation	289
River transportation	289
Foreign steamer service	291
Overland transportation	291
Agriculture	294
Live-stock industry	296
Food products exported to Trinidad	297
Mining	297
Geology of district	298
History of Guayana gold fields	298
"El Callao" gold mine	301
Gold-mining companies	303
Labor conditions in gold fields	304
Methods prevailing in industry	305
Gold production in Ciudad Bolívar district by companies	305
Iron deposits of Imataca	305
Forest products	307
Fine hardwoods	307
Rubber	309
Areas of production	309
Methods and conditions of industry	310
Exports of rubber	314
Balata	314
Methods and conditions of industry	314
Exports of balata	317
Price quotations	318
Future of industry	318
Chicle	318
Conditions of industry	318
Exports from Ciudad Bolívar—American imports from all Venezuela	319
Tonka beans (sarrapia)	319
Cebadilla	320
Balsam of copaiba	321
Other forest products, not exported	322
Angostura bark	322
Quina	322
Sarsaparilla	322
Ipecac	323
Kapok	323
Vegetable waxes, etc.	323
Trade in hides and skins	323
Aigrette plumes	324
Kinds of birds	324
Development and character of industry	325
Progress of breeding	326
Process of collecting plumes	326
Seasons of exportation	327
General notes	327
Statistics of exports	328
Commerce and trade of Ciudad Bolívar district	328
Banking	329
Commercial methods	329

CONTENTS.

XI

Cuidad Bolivar commercial district—Continued.

Commerce and trade of Ciudad Bolivar district—Continued.	Page.
Volume of trade.....	330
Future aspects of trade with Ciudad Bolivar.....	331
Transportation.....	332
Ocean steamship service.....	332
Lines touching at Venezuelan ports.....	332
Competitive freight rates and combination to control ocean freight.....	334
Venezuela's trade with New Orleans.....	335
Railways.....	336
Extent and character of lines—Freight and passenger rates.....	336
Total cargo movement.....	337
Extensions and new construction.....	337
Competition from cart roads.....	338
Railway laws.....	339
List of lines—Technical data—Capitalization.....	340
National system of highways.....	346
Development of road-building program.....	346
Great Western Highway.....	347
Great Eastern Highway.....	347
Lists of roads.....	348
Highway legislation.....	350
Funds allotted to road construction.....	350
Road-building specifications—Method of construction—Materials used.....	350
Use of a road-making machinery.....	352
Venezuela as an automobile market.....	354
Shipments of motor vehicles from United States to Venezuela....	354
Market fluctuations.....	355
Average prices of cars and trucks imported.....	355
Total imports of automobiles.....	355
Customs duties.....	356
Agencies.....	356
European competition.....	356
Taxes imposed by Government on trucks and cars.....	357
Foreign trade.....	358
Totals for Venezuelan commerce.....	358
Export figures.....	359
Import figures.....	361
Venezuelan commerce during 1917, 1918, and 1919.....	364
American trade with north-coast countries.....	367
Summary of Venezuelan trade conditions in 1920.....	367
Unfavorable financial condition.....	368
Effect of exchange.....	369
Outlook for future.....	369
Parcel-post trade.....	370
Banks and banking.....	374
Lists of native and foreign institutions.....	374
Bank of Venezuela.....	374
Bank of Caracas.....	376
Bank of Maracaibo.....	378
Commercial Bank of Maracaibo.....	378
Deschanel International Corporation.....	378
Hollandsche Bank voor West-Indie.....	378
Character of business carried on by native banks.....	379

Banks and banking—Continued.	Page.
Progress of banking system.....	379
Business of foreign banks.....	379
Factors affecting banking activities.....	380
Handling of drafts.....	380
Gold and silver coin in Venezuela.....	380
Interest paid, banking methods, etc.....	382
Effect of foreign banks.....	382
Stamp taxes in connection with drafts.....	383
Banking laws of Venezuela.....	383
Banks of deposit.....	384
Banks of issue.....	385
Mortgage and real-estate banks.....	386
Recent banking legislation.....	386
Tariff system and regulations on import trade.....	387
General character and purpose of tariff system.....	387
Articles admitted free of duty.....	387
Treatment of imports from various countries.....	389
Translations of tariff law available.....	389
Method of imposition of import duties.....	390
Classification of goods for duty purposes.....	390
Dutiable weight.....	390
Surtaxes.....	390
Dutiable value.....	391
Examples of calculation of duties.....	391
Special regulations on certain imports.....	392
Explosives and firearms.....	392
Pure-food regulations.....	392
Pharmaceutical products.....	392
Sanitary preparations and equipment.....	393
Internal taxes on tobacco and liquors.....	393
Shipping instructions and customs regulations.....	394
Consular-invoice regulations and fees.....	394
Warnings for preparation of shipments and documents.....	395
Bills of lading—Insecurity of "to order" shipments.....	396
Shipments by parcel post.....	397
Customs entry of imports.....	398
Customs penalties for irregularities.....	399
Appeals possible against certain customs penalties.....	400
Need for greater care by American exporters.....	400
Commercial travelers' regulations.....	401
Customs treatment of samples and advertising matter.....	401
Commercial practices and requirements.....	403
Slight specialization in merchandising—Tendency toward modern methods.....	403
Services of export commission houses.....	403
Necessity for personal representation.....	404
Territory of agents.....	404
Credits.....	405
First orders—The getting and holding of trade.....	406
Means to attain proficiency.....	407
Negligent factories.....	407
Proper packing for Venezuela.....	408

CONTENTS.

XIII

Commercial practices and requirements—Continued.	Page.
Damage caused by careless handling.....	409
Importance of registration of trade-marks.....	410
Legal registration of drugs and patent medicines.....	411
Registration of foreign companies.....	411
Registration of typewritten documents.....	412
Effective methods of advertising.....	412
Trade-promotive efforts of Venezuelan Government and citizens.....	414
Markets for specific classes of merchandise.....	416
Bags and sacks.....	416
Canned goods.....	417
China, glass, and enameled ware.....	419
Dairy and meat products.....	420
Drugs, medicines, and other chemicals.....	423
Gloves.....	424
Hardware, tools, and other steel products.....	425
Hats and hat-making supplies.....	427
Laces and embroideries.....	428
Optical goods.....	429
Rubber goods.....	430
The Dutch West Indies.....	432
Location, area, and population.....	432
Administration.....	432
Topography and climate.....	434
Characteristics of inhabitants.....	435
Language.....	435
Weights and measures.....	436
Postage and parcel post.....	436
Currency.....	436
Rates of exchange.....	437
Banks and banking.....	438
The port of Willemstad.....	440
Industries and resources.....	441
Live stock.....	441
Fishing.....	442
Salt industry.....	442
Panama-hat industry.....	442
"Curacao" liqueur.....	442
Mining and minerals.....	442
Agriculture.....	443
Markets for specific classes of merchandise.....	444
American flour, corn meal, and lard.....	444
Meats, canned goods, etc.....	444
Manufactured goods, drugs, and chemicals.....	445
Building materials—Machinery.....	445
Motor vehicles.....	445
Petroleum.....	446
Commercial significance of Curaçao.....	447
Extent and character of trade.....	449
Foreign-trade figures.....	452
Statistics of imports.....	452
Exports from Curaçao to United States.....	453
Ships entering Curaçao.....	454
Textile trade.....	454
Tariff.....	454

The Dutch West Indies—Continued.	Page.
Accommodations for travelers.....	455
Cable and wireless service.....	456
Monographs and trade lists relating to Venezuela.....	457
Department of Commerce monographs.....	457
Trade lists available.....	457
Index.....	459

ILLUSTRATIONS.

FIG. 1. Central University of Venezuela, Caracas.....	facing--	I
2. "Colegio de Niñas" (Girls' Seminary) in El Paraiso district, Caracas.....	facing--	36
3. Bird's-eye view of Caracas, looking south.....	facing--	37
4. View of La Guaira.....	facing--	37
5. Map showing Venezuelan petroleum deposits.....		93
6. Interior of paper mill, Maracay.....	facing--	116
7. Caracas-Valencia Highway: Macadam work near Caracas.....	facing--	117
8. Map showing commercial territory tributary to Caracas.....	facing--	120
9. Avenida del Paraiso, Caracas.....	facing--	128
10. Private residence in Caracas.....	facing--	129
11. "Lactuario" (creamery) at Maracay.....	facing--	144
12. Port of Ocumare de la Costa.....	facing--	145
13. Map of Maracaibo commercial district.....		182
14. Map showing commercial district of Puerto Cabello and Valencia.....	facing--	234
15. "Telares" (textile mill) in Valencia.....	facing--	238
16. Interior of packing house, Puerto Cabello.....	facing--	239
17. United States consulate, Puerto Cabello.....	facing--	260
18. Water-front scene, Puerto Cabello.....	facing--	261
19. Map showing commercial district of Ciudad Bolívar.....	facing--	278
20. Map showing islands of Curaçao, Bonaire, and Aruba, in Dutch West Indies.....		433
21. General map of Venezuela.....	facing--	458

LETTER OF SUBMITTAL.

DEPARTMENT OF COMMERCE,
BUREAU OF FOREIGN AND DOMESTIC COMMERCE,
Washington, December 1, 1921.

SIR: There is submitted herewith a handbook of the Republic of Venezuela, with an additional chapter on the Dutch West Indies, of which the principal island, Curaçao, has close commercial relations with the ports of the Venezuelan littoral. The author is P. L. Bell, a trade commissioner of this Bureau, and the book is similar in general plan and treatment to his commercial handbook of Colombia, Special Agents Series No. 206.

Respectfully,

JULIUS KLEIN,
Director of Bureau.

To Hon. HERBERT HOOVER,
Secretary of Commerce.

NOTE.—All conversions from bolivars to dollars in this handbook have been made at the normal rate of \$0.198 to the bolivar.

VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

INTRODUCTION.

GENERAL ECONOMIC POSITION.

Of all the South American Republics none is more worthy of study by American interests than Venezuela, not only for trade, but as a new field for the development of natural resources, raw material, and engineering projects. There are difficulties to be encountered, but, unlike some other Latin American countries, Venezuela possesses a number of excellent natural harbors along its coast, from which enormous areas of level open land are easily accessible, with a certain degree of transportation facilities. In many places, too, the distances are not great nor the terrain very difficult to the rich and undeveloped lands lying just to the south of the low Coast Range and extending from the Orinoco delta on the east to the Venezuelan Andes on the west.

The country lacks sufficient native population for the development of agriculture on a large scale in all its favorable regions, but the two great resources of the country that are the objects of immediate development—cattle and petroleum—do not call for the amount of labor required by general agriculture.

The "llanos" or "pampas" lie south of the Coast Range from east to west for approximately 650 miles, from the headwaters of the Rio Apure in the Venezuelan Andes eastward to the Rio Vagre, the dividing line of the Orinoco delta country, and have an average mean depth of 200 miles from the line of the Coast Range south to the Rio Apure in the western half and to the Orinoco in the eastern half. This area, containing approximately 130,000 square miles, has been compared to the great pampas of Argentina, although conditions are more tropical. If the regions of the Ventuari and the plains of Sarari are included, the total cattle range area would be 156,610 square miles.

One foreign oil company has drilled 86 wells, many of them producing; one refinery is in operation, and there are so many indications of petroleum in many parts of the country that conditions already border on an oil "boom."

Mining is in its infancy, although Venezuela has to its credit several large producers. Gold and copper are the principal metals. Large deposits of good coal, easily accessible to the coast, are found in the extreme western central coast region and to the east. They have received considerable attention from the Government and several foreign companies. In Venezuela is also found one of the largest and best iron-ore deposits in the world. High-grade asphalt occurs in large quantities in the Orinoco delta region. Other important mineral resources include sulphur, magnesia, kaolin, etc.

Venezuela's exports of coffee, cacao, hides, forest products, etc., can not be increased materially without an increase in the present population. Industry was greatly stimulated during the war by the high prices. There are now two paper mills (none existed before) and several new cotton mills and sugar mills, besides numbers of small shops that make articles formerly imported from Europe and the United States.

Another effect of war conditions was the increase in the production of native cotton, lard, and cereals. The production of corn in 1918 was sufficient to permit exportation to the United States and to Cuba, and there were heavy shipments of lard also to the latter country.

Prior to the war, except for imports of certain classes of cotton textiles, foodstuffs, cement, typewriters, sewing machines, and other American specialties in which Europe does not compete, the main channel of trade and importation had been with European countries, principally Germany, the United Kingdom, and France. These countries had for many years made a careful study of the merchandise requirements of Venezuela, backing their efforts with long credit terms for the sale of their products and facilitating the marketing of Venezuela's exports.

With the outbreak of the war, and with their former trade channels entirely or partly cut off, Venezuelan merchants were forced to turn to the United States to fill the demands of their trade, and they have increased their purchases in the American markets to an enormous extent. But representatives of European business houses held their ground in Venezuela during the war remarkably well; many have returned to the country since peace has been declared, eager to take up the old relations and to develop them; and, as a rule, Venezuelan importers have found it difficult to understand conditions that developed in the United States during the war period as a result of the world's demand for goods and materials, and are looking forward to the renewal of trading with Europe. At present, however, the general trade influence is still strongly American, and with the increasing visits of Venezuelan business men to the United States and the great volume of business during and immediately following the war, American interests have gained a marked advantage, which can be permanent if they realize in time the danger of competition from Europe after its return to normal conditions of production and commerce.

To retain this trade with Venezuela and to increase it, the keynote should be an intensive cultivation of the personal relation with Venezuelan business men; better attention to the commercial possibilities and industrial enterprises that need only capital, ingenuity, and ability; and a close and detailed study of the potentialities of the country. Study of the merchandise needs and requirements and attention to the details of exporting are absolutely essential. Americans who display an interest in Venezuela will be met more than halfway by Venezuelan business men.

LANGUAGE.

All correspondence should be in Spanish unless otherwise indicated. Catalogues, price lists, etc., should be in Spanish.

WEIGHTS AND MEASURES.

The metric system of weights and measures is used in Venezuela and is the official system. All quotations and other data should be given in metric units. American catalogues containing weights and measurements in the English system should always include metric equivalents. This matter is very important.

CURRENCY.

Venezuela possesses a stable currency based on gold. The monetary unit since 1879 has been the bolivar, divided into 100 centimos and weighing 0.32258 grams of gold 0.900 fine, or 0.291032 grams of pure gold, the exact equivalent of the French franc, 9½ d. British money, or \$0.193 United States currency. The par value of the United States dollar in terms of Venezuelan currency is 5.18262 bolivars. Existing coinage consists of gold, silver, and nickel in pieces as follows: Gold, 20 bolivars; silver, 5, 2½, 2, 1, 0.50, and 0.25 bolivars; nickel, 0.125 and 0.50 bolivars. All coins are now subordinated to the bolivar as the unit of the system, although several old Venezuelan coins of gold and silver survive, each with a distinct name puzzling to newcomers. A nominal unit, the "peso," equal to 4 bolivars, was formerly much used in commercial transactions. The word "peso" still survives in conversation, particularly among the country people—also the old Spanish terms "real" (0.50 bolivar), "medio" (0.25 bolivar), "cuartillo" (0.125 bolivar), and "centavo" (0.05 bolivar), though the use of the bolivar is compulsory.

All foreign gold coin is legal tender at rates fixed by law in January, 1912, as follows:

Franc (French)=1 bolivar.
Peseta (Spanish)=1 bolivar.
Dollar (American)=5.20 bolivars.
Pound sterling (British)= 25.25 bolivars.
Mark (German)=1.25 bolivars.

The Government offices are compelled by law to receive and pay the 20-franc gold pieces of France, Belgium, Italy, Switzerland, at the rate of 20 bolivars each; Spanish gold "onza," onza patriotica, Central American or Colombian onza at 80 bolivars; German double crown or 20-mark piece at 24.75 bolivars; double condors of Colombia at 100 bolivars; Mexican onza, weighing 33.700 grams 0.875 fine, at 100 bolivars; Spanish Isabelina of 25 pesetas at 25 bolivars; English sovereigns at 25.25 bolivars; and United States \$20 gold pieces at 104 bolivars—penalties being prescribed for noncompliance with the terms of this decree. Gold coin is much in demand, especially in the large cattle-raising regions of the llanos, where quantities are hoarded and withdrawn from circulation. Largely on this account gold coin commands a premium ranging up to 2 per cent and lately as high as 3 per cent on account of contraband exports induced by the exchange situation. Silver is freely used for pay rolls, etc., for the laborers employed in Venezuela.

Bank notes are issued by the Bank of Venezuela and the Bank of Caracas, both of Caracas, and two banks in Maracaibo. Bank notes circulate less and less freely as the distance from the cities of issue

increases, and they are difficult to dispose of in the interior, where strong preference for gold persists. Certain banks possess the privilege of issuing notes against a gold reserve, but these are not legal tender outside of the State in which the banks are established. American bills are usually worth from one-half of 1 per cent to 1 per cent under the buying rate of exchange. They are not good for general circulation, but are usually accepted in the larger stores of the coast cities at 5 bolivars to the dollar.

Venezuela is one of the seven Latin American countries in which gold coin is in actual use, and as a rule it has steadily maintained a par rate of exchange.

The following points are covered by the Venezuelan monetary law:

Gold coins of all kinds may be freely imported, but special permission from the Government is required for exportation. Silver money can be neither imported nor exported without such permission. No money of any kind is allowed to be sent through the mails, either local or foreign. As no money-order system exists in Venezuela, transfers of money from one part of the country to another are usually made through orders on banks or commercial houses.

An Executive decree of January 16, 1912, prohibited the importation of gold coin lacking in weight and fineness under the Venezuelan law. All imported coins were to be minutely inspected by the Government assayer, and upon those lacking the required fineness and weight a heavy fine was to be imposed. Perforated, worn, or smooth gold coins are prohibited.

According to the constitution of 1914, no legislative or executive power nor any authority of the Republic could issue paper money nor declare a forced circulation of notes. The capital of the banks then permitted to issue notes was as follows: Bank of Venezuela, 12,000,000 bolivars; Bank of Caracas, 6,000,000 bolivars; Bank of Maracaibo, 1,250,000 bolivars.

The Government did not hold itself responsible for the issue of such notes, although according to the banking law, chapter 20, article 60, banks of circulation were required to have as guaranty a gold reserve fund equal to one-fourth of their capital. This could not be released except in exchange for bank notes in case of a crisis (provided that the sum be restored within one year). Banks were permitted to issue notes to an amount double their capital, on the condition that the sum represented by the notes be guaranteed by its third part in metal (art. 80).

The acceptance of bank notes was not obligatory (art. 22). No depreciated fiduciary medium was allowed to exist in Venezuela. There is no conversion office.

While the currency is on a gold basis and the finances of the country are in a sound and prosperous condition, the rising price of silver presents to the Government a serious problem in connection with its subsidiary coinage.

Venezuela has \$10,000,000 in silver coins in circulation. Because of the growth of commerce, a constantly greater amount is needed. During the harvest seasons silver has gravitated to the harvesting sections, returning later to the 28 agencies of the Bank of Venezuela. During the last three years the return of silver has been lessening,

the number of bank notes guaranteed by gold has greatly increased, and it is feared that the silver currency may disappear from circulation. Venezuela, in proportion to its population, needs more silver coin than most other countries because the use of checks and bank notes is not so general.

The bank notes of the four national banks of issue in Venezuela are exchangeable for gold or silver on presentation at any of the 28 agencies of the Bank of Venezuela.

POSTAGE.

Venezuela uses Postal Union rates. Articles are classified as letters, post cards, printed matter, commercial papers, samples of merchandise, and not as first-class matter, second-class matter, etc. The rates from the United States to Venezuela are as follows: Letters and other sealed matter, 5 cents for each ounce or fraction, and 3 cents for each additional ounce or fraction thereof; post cards, single, 2 cents; post cards, double (reply), 4 cents; printed matter,¹ 1 cent for each 2 ounces or fraction thereof; commercial paper,¹ 5 cents for each 10 ounces or less and 1 cent for each additional 2 ounces or fraction thereof; samples of merchandise,² 2 cents for first 4 ounces or less, and 1 cent for each additional 2 ounces or fraction thereof; registration fee, 10 cents in addition to regular postage.

The postage rate on packages sent by parcel post is 12 cents per pound, or fraction thereof.³

The Venezuelan customs tariff assesses duty on the weight of the merchandise imported; in only a few cases is an additional ad valorem duty assessed. The packing is generally included in the weight of the merchandise. Each kind of goods is placed in a separate class, and the duty is fixed according to its weight and class.

Venezuela having adopted the metric system, everything is weighed in kilos. A kilo is equal to 2.173 Spanish pounds and 2.2046 avoirdupois pounds.

Since the decree of September, 1918 (see p. 397), the regulations governing parcel-post imports have been amended to include a requirement that before the package is delivered the addressee must agree to accept responsibility for the declaration of the contents of the package and for the payment of all duties and of all fines that may be imposed for errors made in drawing the accompanying documents. As this written acceptance has to be given to the customs authorities before the addressee has had any opportunity of first examining the package or its contents or the documents attached, addressees of parcel-post shipments commonly refuse to receive them unless previous arrangements have been made with the senders. Great care should be exercised, therefore, in the preparation of all parcel-post shipments to Venezuela, the best course being to obtain

¹ The maximum size is 45 centimeters in any direction, except that rolls may be 75 centimeters long if not more than 10 centimeters in diameter (1 centimeter=0.39 inch). The weight limit is 2 kilos.

² Samples must not consist of salable matter nor include manuscript other than the usual commercial information. Weight limit, 350 grams. Length limit, 30 centimeters; width, 20 centimeters; and depth, 10 centimeters; except that in form of roll package may measure 30 centimeters in length and 15 centimeters in diameter.

³ For fees and other conditions on shipment of parcel-post packages to Venezuela, see p. 397.

detailed instructions from the persons to whom they are to be sent and to follow such instructions to the letter. Parcel-post shipments should never be made without advising the addressee separately and, if possible, giving him a full description of the goods sent and copies of the accompanying documents. Five centimos per day is charged for storage, beginning five days after the receipt for payment of duty by the addressee.

The Venezuelan Postal Administration has informed the United States Post Office Department that "war materials" should be added to the list of articles specially prohibited in the parcel-post mails to Venezuela. It is also stated that any number of packages desired may be received by the same person in Venezuela by the same steamer, provided the weight of each package does not exceed 5 kilos (11 pounds).

The following table shows the Venezuelan postal rates, foreign and domestic:

Items.	Colombia, Panama, Trinidad, Curaçao, Bonaire, and Aruba.	Other foreign.	Domestic.
	<i>Bolivar.</i>	<i>Bolivar.</i>	<i>Bolivar.</i>
Letters weighing 20 grams or less, each.....	0.25	0.50	0.25
Letters weighing more than 20 grams, for each 20 grams in excess.....		.25	.15
Post cards, single.....	.10	.15	.10
Printed matter weighing not over 50 grams.....	.05	.10	.05
Samples weighing not over 100 grams.....	.10	.15	.05
Commercial papers weighing not over 250 grams.....	.25	.30	.15
Papers, samples, or printed matter, for each 50 grams excess.....		.05	.05
Certification.....		.50	.50

Packages of samples must not exceed 350 grams in weight, and those of coffee for Italy can not exceed 100 grams. The cost of certification of parcel-post packages for export, inclusive of advice of arrival, is 0.50 bolivar, and a return receipt of delivery is obtained for 0.25 bolivar extra. Newspapers of Venezuela are carried free of charge and foreign newspapers as printed matter.

The urban service rates are as follows:

	<i>Bolivar.</i>
Letters weighing 20 grams or fraction thereof.....	0.10
Post cards, single.....	.05
Post cards, in sealed envelopes.....	.10
Post cards, in envelopes but not sealed.....	.05
Printed matter, not over 100 grams in weight.....	.05
Newspapers, domestic or foreign, each.....	.05
Registration, with receipt for delivery.....	.25

The weight of packages of commercial samples must not exceed 250 grams and the weight limit of all first-class matter is 2 kilos.

TELEGRAPH, CABLE, AND WIRELESS SERVICE.

The Venezuelan telegraphs, which are owned and operated by the Government, have 9,358 kilometers of wire (1 kilometer=0.62 mile) and 215 stations, of which 67 are important towns and centers of population. Rates are fixed according to the number of words contained in messages to be transmitted by telegraph and are not regulated by the distance served.

On ordinary days, from 6 a. m. to 7 p. m. the following rates are charged: 1 to 10 words, 1 bolivar (\$0.193); 11 to 15 words, 1.25 bolivars; 16 to 20 words, 1.50 bolivars; 21 to 25 words, 1.75 bolivars; and a continued increase of 0.25 bolivar for each additional 1 to 5 words. From 7 p. m. to 6 a. m. double rates are charged. On fiesta days and national holidays double rates are charged, according to the hour.

Commercial and private messages are always subject to delay, as official messages take precedence over all other classes of telegrams. In 1920 the Venezuelan Government was planning to install duplex telegraph instruments in all important stations to facilitate the service.

The Cie. Française des Cables Télégraphiques has an exclusive cable concession, with the preferential right over other foreign companies to install wireless service. The offices are at Caracas, La Guaira, and La Vela de Coro. The same rates are charged from any telegraph station of Venezuela. Messages go via Curaçao, Santo Domingo, Haiti, and New York. The Venezuelan cable rates per word are as follows:

Countries of destination.	Charge per word.	
	<i>Bolivars.</i>	<i>Dollars.</i>
New York and States east of the Mississippi.....	5.00	0.97
States west of the Mississippi.....	5.25	1.01
Germany, France, United Kingdom, Belgium, Netherlands, etc.....	6.25	1.21
Austria-Hungary.....	6.50	1.27
Spain.....	6.90	1.33
Greece and the Greek Islands.....	6.80	1.31
Italy.....	6.55	1.28
Norway.....	6.75	1.30
Sweden.....	6.90	1.33

The cable line is old and badly in need of repair, and constant interruptions of the service occur. To secure even moderately rapid service, the "urgent" rate of \$3 per word has to be paid for commercial messages. Though the exclusive concession of the French company also includes wireless, it does not prohibit the Government from installing a high-powered wireless set and using it for oversea communication, for its own purposes or for commercial messages, competing with the concessionaire.

Cable communication is also afforded with South America over the line of the Amazon Telegraphs, and with the west coast via Panama.

In 1920 the Venezuelan Government called for bids for the installation of a wireless-telegraph station in the vicinity of Caracas, of sufficient power to communicate with the United States at all times and with Europe throughout the night and at certain times during the day. Under date of August 28, 1920, the Venezuelan Government refused to act on the three bids received, the reason given being the lack of information contained in the bids as to the complete cost of the finished wireless station. At the same time a resolution provided for the employment of a technical expert (excluding representatives of wireless companies) to study the subject with the object of making an estimate of the final cost of the complete installation.

There are four wireless telegraph stations now in operation in Venezuela, these being located at La Guaira, Puerto Cabello, Maracay, and Maracaibo. Additional stations are under construction at San Cristobal and in the Federal District. These are all of $3\frac{1}{2}$ or 5 kilowatt capacity, and the equipment is largely of American manufacture.

About 20 other 5-kilowatt land wireless sets are to be installed as soon as possible by the Government, but it is doubtful whether this service will be used commercially. It will have the effect, however, of releasing the telegraph from the present congestion of official messages.

GEOGRAPHY, TOPOGRAPHY, AND CLIMATE.

GEOGRAPHIC POSITION—AREA AND BOUNDARIES.

Venezuela is in the northern part of South America, between latitude $0^{\circ} 45'$ and $12^{\circ} 26'$ N. and longitude $59^{\circ} 35'$ and $73^{\circ} 20'$ W. Its area is 1,020,406 square kilometers (1 square kilometer=0.386 square mile), equivalent to more than the aggregate area of Texas, Kentucky, Tennessee, Alabama, Mississippi, and Louisiana. It is bounded on the north by the Caribbean Sea; on the south by Brazil and Colombia; on the east by Brazil, British Guiana, and the Atlantic Ocean; and on the west by Colombia.

TOPOGRAPHY.

Venezuela's coast line measures 3,020 kilometers (1 kilometer=0.62 mile) and has 32 harbors, 50 small bays, and many coves, besides the lakes of Maracaibo and Tacarigua and the estuary of the Orinoco. This coast line and the Orinoco River alone would make Venezuela important. From the coast there are three natural inlets to the plains and mountains of the interior. One is from the harbor of Puerto Cabello via San Felipe and the Abra de Altar, communicating with the foot of the Venezuelan Andes in the west and with the high plains of the headwaters of the Rio Apure, the principal affluent of the Orinoco. There is another such inlet by way of Barcelona on the eastern coast, through which the great plains of the northeastern area are accessible. The third is the great delta of the Orinoco, approached from the Atlantic Ocean and the Gulf of Paria.

Venezuela is divided into three zones—the mountains, the plains, and the forests. The four main topographic divisions are: (1) The Guiana Highlands, including all that part lying south and east of the Orinoco toward Brazil; (2) the great central area of the llanos, or plains, which extend for 650 miles east and west and are bounded by (3) the northeastern branch of the Great Andine Chain, which comes up from Colombia, and (4) in the northwest of the country a low-lying region around Lake Maracaibo. All these divisions lie wholly within the tropical zone and their main features are uniform, but each includes somewhat varying types of land surfaces.

MOUNTAIN GROUPS.

The important mountain groups comprise the Andes to the west, the Coast Range extending along the Caribbean Sea throughout the main central area, and the Guiana Highlands, or Parima Ranges, southeast of the Orinoco delta. The branch of the Colombian Andes, called the Cordillera Oriental in Colombia, which penetrates the western limits of Venezuela at the Paramo of Tama, an important mountain group 3,606 meters in height (1 meter=3.28 feet), forms the western boundary of the country with Colombia and extends in a pronounced range toward the north, ending in the Peninsula

of Goajira. This range sends off another branch, which extends in a northeasterly direction south of Lake Maracaibo and rises in great peaks in the regions of Merida and Trujillo, falling off toward the northeast and disappearing at El Altar. In this range are found the highest peaks of Venezuela—La Corona, with two peaks 4,850 and 4,882 meters high, Piedras Blancas of 4,760 meters, and other peaks of great height. This spur of the Andes in Venezuela is linked to the Caribbean Coast Range by the Segovia Highlands, possessing the main features of a table-land which extends in a broad belt through the States of Lara and Falcon.

Beyond El Altar, along the coast, the mountains of the Coast Range begin, descending rather abruptly to the Caribbean Sea. At about the center of this part of the Coast Range, just to the south of it, is Lake Valencia, near the center of the most productive agricultural district of Venezuela. The main peaks of this section of the Coast Range are the Pico de Naiguata (2,765 meters) and the Silla de Caracas (2,367 meters). This range terminates abruptly at Cape Codera, near the port of Carenero. To the east of Cape Codera there is a shallow indentation in the coast line reaching as far as Barcelona, the land rising evenly toward the interior and forming a plain, which makes one of the natural entrances from the coast to the interior of the country. The Coast Range again rises near the city of Barcelona, extending east and northeast and including the entire peninsulas of Araya and Paria. Within these mountains the lagoons of Campoma and Putucual are located. The principal elevations of the Paria section of the Coast Range are Pico Turumiquire (2,600 meters), San Bonifacio (1,500 meters), Cerro Purgatorio (1,550 meters), and Tataracual (1,460 meters).

In the region of Caracas are two main lines of hills known locally as the Serrania Costañera and the Serrania Interior, with the Valley of Caracas lying between the ridges; but in the neighborhood of Barcelona and Cumana and throughout the Paria Peninsula, this division is not so pronounced. Toward the end of the Paria Peninsula the range does not rise above 975 meters.

On the northern or coast side the Coast Range is drained by many small but precipitous mountain streams, which are dry during the dry season, as a rule. On their southern side these mountains are the headwaters for many small tributaries of the Orinoco. The plain between Carenero and Barcelona is drained toward the sea by numerous small streams throughout its northern half, but toward the Orinoco to the south over its southern half.

The Segovia Highlands, ranging from 460 to 1,070 meters in elevation, are best defined in the State of Lara, in the region of its capital, Barquisimeto. This plateau is dry and barren, with cactus vegetation, and suggests the general features of the dry bed of an ancient lake, interspersed with low hills. North of Barquisimeto there are low ranges; the most important are the Cordillera de Baragua, Agua Negra, and San Luis, the last-named being the largest and extending for 177 kilometers parallel to the Coro coast and overlooking the Gulf of Venezuela.

In the interior, extending from the foot of the Venezuelan Andes on the west to the delta of the Orinoco on the east, and from the

southern side of the Coast Range on the north to the Orinoco on the south, are the plains of Venezuela, measuring, roughly, from east to west 650 miles, and from north to south 200 miles. The plain area proper—the drainage basins of the Apure and Orinoco Rivers—is estimated to contain 225,000 square kilometers; and if there is added the great extensions toward the south as far as the great southern tributaries of the Orinoco, the Meta and the Arauca Rivers, the total area is 800,000 square kilometers. However, for practical purposes to-day, this latter region is not considered as belonging properly to the plains, since the country to the south of the Apure and Orinoco is heavily timbered, except far to the west along the Rio Meta, while the northern plains are mostly open and covered with long natural grasses.

These northern plains drain toward the Apure throughout their western half and toward the Orinoco throughout their eastern half, the slope being gradual from the southern side of the Coast Range to the Orinoco River. The average elevation above sea level is only about 650 feet in the central portion, and during the rainy season the rivers overflow their banks and spread for miles over the main valleys. These overflow areas are called "pampas." (A more detailed description of these plains will be given in the chapter on cattle, as this great level accessible area constitutes one of Venezuela's greatest assets for the production of beef cattle.)

The delta of the Orinoco extends from the Rio Vagre, which divides it on the north from the plains, to the Carosimia, which flows east and west and is the main outlet of the Orinoco. This region is level and is composed of low lands subject more or less to heavy overflow from the many channels of the great river which drains into them. The entire region is heavily timbered with tropical growth.

South and east of the Orinoco lie the Guiana Highlands, which include all of that vast and more or less unexplored portion of Venezuela lying along the right bank of the Orinoco and around its headwaters. This area is primarily one huge plateau about 1,000 feet or more in height, from which rise a few principal mountain ranges with some peaks over 8,000 feet high, while smaller chains of hills link up the larger ranges or groups. The highest ground is found on the Brazilian frontier, beginning at Mount Roraima (8,500 feet), where the boundaries of Venezuela, British Guiana, and Brazil meet. This main range then extends to the west and south, in the Sierras Pacaraima and Parima, to the headwaters of the Orinoco near Esmeraldas. From the Roraima Range the Orinoco-Cuyuni watershed extends northward within Venezuela along the Sierras Rincote and Usupamo and the Highlands of Piedad to the Sierra Piacoa, and thence southeast along the Sierra Imataca to the British limits again. The Sierra Maigualdia forms the watershed between the Caura and the Ventuari.

This entire area, which amounts to some 204,600 square miles, is well watered by the upper Orinoco, which here flows from south to north, and the Rio Ventuari and other great tributaries, the Cuchivero, Caura, Aro, Caroni, and their affluents. Large as these rivers are, they are so broken by rapids and so subject to alternate floods and extreme low water that travel along them is possible only in

small canoes and other portable craft; and even then their passage is fraught with danger.

Save for the districts in the immediate neighborhood of the Orinoco and other scattered areas, the whole region is covered with dense tropical forests containing all the varied natural products of the South American tropics.

The Guiana Highlands represent not only the oldest rock formations in Venezuela but also the most ancient land surfaces in the world, offering many analogies, from a geological point of view, with the highlands of Scotland. The great elevated platform from which rise the peaks and mountains of the Guianas appears everywhere to be composed of similar rocks, gneisses, hornblendes, schists, and granites, all containing evidences of great geological antiquity, and is considered by scientists as being more or less equivalent in age to the oldest members of the Archaean system.¹

The surfaces covered by the various mountain systems of Venezuela are as follows: Venezuelan Andes, 57,600 square kilometers; Sierra Perija (toward the Goajira Peninsula), 12,000 square kilometers; ranges of Coro, 40,200 square kilometers; central Coast Range, 44,000 square kilometers; eastern Coast Range, 15,000 square kilometers; total, 168,800 square kilometers.

These different mountain groups inclose extensive areas that, in separate hydrographic bottoms, collect the rainfall, or water resulting from filtration, and carry it to the small rivers. These flow into the principal rivers which give the basins their names. The Andes limit the water flowing into Lake Maracaibo, the Coast Ranges the water passing directly to the sea and, on the south, to the Lake of Valencia. The great area to the south is drained by the Orinoco, with its principal tributary, the Apure, and the Rivers Negro and Cuyuni.

RIVER SYSTEMS.

The Orinoco rises in the summits of the Parima Range and flows in a general northerly direction for about half of its length, turning directly east at the point of its junction with the Apure, coming from the Venezuelan Andes. Near its headwaters in the region of Esmeraldas it is connected with the Rio Negro, which flows into the Amazon, by a shallow canal called the Casiquiare. It is possible during high water to travel by canoe, except for a few portages, from the mouth of the Orinoco upstream and then down the Amazon. Farther to the north and near the boundary with Colombia (now in dispute), in the region of San Fernando de Atabapo, the Orinoco is joined by the Ventuari, which drains the eastern region of the Guiana Highlands, and also the Rio Guaviare (the latter junction being at the town of San Fernando de Atabapo) and the less important Rio Inirida. Still farther to the north the Orinoco is joined by the Vichada, also coming from the plains of Colombia to the east near the town of Maipure. The great Rio Meta flows into the Orinoco at a point called San Carlos Viejo, a rubber camp, and from this point the Orinoco continues to the north by northeast to the point of its junction with the Apure River.

¹ For more detailed geological history of Venezuela, see "Venezuela," by Leonard V. Dalton, pp. 38 to 46.

The general course mentioned as being to the north is in reality a great bend, first to the east to San Fernando de Atabapo, then north to Maipure, and then northeast to the Apure. Before reaching the Apure the Orinoco receives the waters of two smaller tributaries, which also come from the Southern Venezuelan Andes, the Rios Capanaparo and Arauca, the latter being the larger and more important. The Arauca and the Apure rise in the Colombian Andes very near each other. The principal affluent of the Apure is the Rio Portuguesa, which drains the great area south of Lake Valencia and Barquisimeto and joins the Apure at the town of San Fernando de Apure. Another northern tributary of the Apure is the Rio Guarico, which flows directly south from the Caracas hills.

After its junction with the Apure, the Orinoco receives many small streams, which drain the great plains lying along its northern bank, but none is important until the delta country is reached, where the dividing line is the Rio Vagre. This is not properly a river, but a great "caño," or channel, connecting the Orinoco with the Gulf of Paria, and in reality one of the largest discharges of the Orinoco proper.

On the southern side, after leaving San Fernando de Apure, the Orinoco is joined by the Rio Caura, an unimportant stream, and then by the large Caroni which flows into it near Barrancas, east of Ciudad Bolivar. The Caroni gives access to the forest region south and east of the delta of the Orinoco and drains the southeastern portion of the country.

From Barrancas the principal outlet of the Orinoco is called the Rio Corosimia, which flows directly east into the Atlantic Ocean. The Corosimia-Orinoco is navigable for steamers of 1,500 tons as far as Ciudad Bolivar. In the great lowlands of the delta there are numerous channels and rivers, so called, all carrying the waters of the Orinoco into the Atlantic or the Gulf of Paria.

The Caribbean coast line has no important or navigable rivers, with the exception of the lowlands of Coro-La Vela, south of the Peninsula of Paraguana, where there are networks of tiny streams forming swamps.

Innumerable small streams drain into the great basin of Lake Maracaibo in the extreme western part of Venezuela. Two large navigable rivers flow from the south and southwest into Lake Maracaibo—the Rio Escalante, navigable for small steamers as far as Santa Barbara, the rail point for Merida, and the Rio Catatumbo, which is joined by the Rio Zulia coming from the Colombian Andes near Cucuta and navigable for small river steamers as far as Puerto Villamizar, the rail point for Cucuta in Colombia. The Rios Zulia and Catatumbo form the means of communication between the important producing regions of Cucuta in Colombia and Maracaibo in Venezuela.

Farther to the north, along the western side of Lake Maracaibo, there are several important rivers (El Limon, Palmar, and Apon), navigable for the canoes of the natives. The valley of the Rio Limon contains large and good deposits of coal.

The Orinoco is 2,373 kilometers in length (1 kilometer=0.62 mile) and is navigable for 1,930 kilometers from the Atlantic Ocean. River steamers from Ciudad Bolivar can ascend the river as far as the town

of San Fernando de Apure, on the Rio Apure, but with difficulty during the season of low water from December to June. There are 1,059 rivers and streams, 230 of which flow into the Caribbean Sea and 200 into Lake Maracaibo. Among the rivers of less importance are the Uribanta, Guanare, Sarare, Masparro, Masparrito, Santo Domingo, and Cojedes. There are counted 4 rivers of the first order, 25 of the second order, and 12 of the third order, as belonging to the Orinoco system. The following table shows the length, navigable course, drainage area, and sources of the most important rivers:

Rivers.	Length.	Navigable course.	Area drained.	Sources.
	<i>Kilometers.</i>	<i>Kilometers.</i>	<i>Square kilometers.</i>	
Orinoco.....	2,373	1,930	530,097	Parima.
Apure.....	1,187	1,005	128,000	Merida.
Guaviare.....	663	.....	37,280	Nueva Granada, Colombia.
Meta.....	902	888	111,600	Colombia.
Caroni.....	892	782	56,800	Parima.
Cuyuni.....	.....	.....	158,109	Roraima.
Rio Negro.....	.....	.....	100,359	Colombia.

THE GREAT PLAINS.

The most important of the accessible undeveloped regions of the country are the great plains stretching from east to west north of the Orinoco and Apure Rivers, which are suited to cattle raising; the rich alluvial region east of Lake Maracaibo, and the rich agricultural region around Lake Valencia.

On account of the sparse population and the scarcity of labor in the country, any large development in agricultural production can not be looked for without immigration; and since the war there are many difficulties in the way of any great number of colonists going to Venezuela or to other like countries of South America. This fact leaves the great llanos as the most important factor of development and production of additional wealth for Venezuela. Cattle do not require the same amount of labor as general agriculture and Venezuelan ports of shipment for cattle (Puerto Cabello and Guanta) are a week to 10 days nearer American and European ports than the great beef-shipping ports of Argentina. The development of the stock-raising industry will make Venezuela of international importance, and as wealth is thus acquired the other resources of the country will be exploited.

Although these great plains are "open range" covered with natural grasses suitable for cattle feeding, conditions in general are not those of the pasture lands of Argentina. The Venezuelan climate is much more tropical; tropical diseases are prevalent, and the river valleys are subject to overflow during high water. The higher lands to the north along the foothills of the Coast Range generally lack sufficient water during the dry season (December to June), but much could be done by the development of water from wells, dams, etc.

(See also chapters on cattle raising and petroleum.)

CLIMATE AND RAINFALL.

Venezuela lies wholly within the Torrid Zone. The branches of the Andes that cross the country in the western part, the Coast Ranges, and the elevations farther south, give the country a very varied climate—climate in this part of the world being more a matter of elevation than of latitude. At sea level and at elevations up to 3,000 feet above sea level the climate is tropical; from 3,000 to 5,000 feet, semitropical; at 7,000 feet, ideal in temperature; at 9,000 feet, cold and damp. The perpetual snow line is at 16,000 feet, and some of the western peaks of only 14,000 feet show considerable snow nearly all the year round.

There are two seasons—the dry and the rainy—varying with the elevation and topography of the country, but in general well defined and fairly constant. Generally speaking, for the more inhabited regions of the country, the rainy season lasts from the beginning of May to the beginning of November, not much rain occurring during the rest of the year. In some years the rainy season, especially in the Caracas Valley and district, does not begin until the month of June and at times the heavy rains last until the end of November. During the spring there are heavy drizzles, lasting for about two weeks, which are very beneficial to the growth of small fruit, corn, beans, etc.

The hottest months are March, April, and May, and it is moist and warm during the rainy season. The coldest months are December, January, and part of February, when maximum low average temperatures of 41° to 43° F. may be registered in some of the smaller towns of the Andes. At Caracas, the capital, 922 meters above sea level, the average maximum low temperature is 48°, the annual average temperature of 67.1° and with the maximum average high temperature 90°. Along the coast and in the low lands of the Maracaibo basin and interior river valleys the maximum high average is 97°, and the temperature falls to an average of 64° to 68° during the dry season.

The rainfall varies with the elevation and topographical formation of the region. Throughout the Caribbean coast it generally amounts to more than 1 meter (3.28 feet). In some places, such as at Puerto de la Cruz, about 80 kilometers west of La Guaira, it amounts to 2 meters, but in Caracas the annual precipitation is only 800 millimeters (1 millimeter = 0.03937 inch). The following table shows the rainfall (average) for the different months in Caracas, in Merida (in the Venezuelan Andes, at an elevation of 1,600 meters), and in Maracaibo, second city of the Republic, on Lake Maracaibo. At these points meteorological stations have been maintained by the Government for some time.

Months.	Caracas.	Merida.	Maracaibo.	Months.	Caracas.	Merida.	Maracaibo.
	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>
January.....	0.98	4.13	0.03	August.....	4.19	7.19	4.29
February.....	.26	2.93	.....	September.....	3.55	6.20	2.26
March.....	.71	5.17	.....	October.....	3.88	11.46	9.76
April.....	1.60	5.15	1.13	November.....	3.44	10.98	2.87
May.....	2.89	7.21	1.46	December.....	1.91	1.24	.41
June.....	3.93	9.17	4.38	Total.....	31.89	76.09	29.10
July.....	4.55	5.26	2.51				

The climate of the entire Maracaibo Basin, more especially that part lying to the west of Lake Maracaibo, is considerably influenced by the proximity of the arid region of the Goajira Peninsula. The rainfall of the region lying to the south and east of the Orinoco is especially heavy, as it is also in the delta north of the main outlet of the river.

The hurricanes of the Antilles hardly ever reach the coast of Venezuela with sufficient force to do any great amount of damage; they are felt mainly as heavy ocean swells. The prevailing winds are northwest and southeast. The velocity seldom exceeds 18 meters per second, or about 40 miles per hour.

The open llanos, while free from the dense tropical vegetation of the areas south of the Orinoco, as a rule, are hot and tropical. The best climatic locations in the cattle country proper are the slopes of the coast ranges, at an elevation of about 3,000 feet.

The best-developed agricultural region, around Lake Valencia, is also hot, and tropical diseases are rife. Workmen from the higher towns of the western interior or from Caracas are difficult to obtain and hold in this region on account of the prevalence of malaria. The sugar plantations of the Maracaibo Basin are noted in the country for the extreme tropical climate and tropical conditions. Even the Goajira Indians, natives of the region to the west of the lake, suffer from regular epidemics of malaria during the latter part of the rainy season. Any extensive development in agriculture, such as cotton or sugar-cane planting, would have to be undertaken with full attention to sanitation and medical service on a scale with the work contemplated. This expense must be taken into consideration, as well as the prevalent anemia, which detracts from efficiency in all lines of work. The investment in sanitation and medical educational methods is, of course, high, but it has proved necessary in the Tropics and more than repaid by the maintenance of a sufficient working force and the general increased physical ability of the men engaged in the field work. The natives of the country, born and raised in these same tropical regions, are not immune to malaria, but suffer from it in latent form. Neither is West Indian labor (Negro) immune, although less subject to the more pronounced form of malarial fever. In connection with the effect of climatic conditions on labor in general, it may be well to add here that measures taken to improve the diet of persons engaged in heavy labor in the Tropics have resulted in increased efficiency. The principal needs are fresh vegetables and cereals and improvement in methods of preparing food.

POPULATION AND LIVING CONDITIONS.

STATISTICS OF POPULATION.

According to the Government estimate as of December 31, 1917, the population of Venezuela was placed at 2,844,618 (including about 325,000 Indians), or about 2.8 per square kilometer (7 per square mile). In comparison with other countries the annual increase in population is slight. The largest cities are Caracas, officially credited with 86,798 inhabitants; Valencia, with 64,861; and Maracaibo, with 48,480. Caracas is generally supposed to have at least 100,000 people, including the small villages of the immediate surrounding country and the suburbs. The following table shows the population from 1905 to 1909, together with the natural increase and the increase by immigration:

Years.	Population.	Natural increase.	Increase by immigration.	Total increase.
1905.....	2,598,063			
1906.....	2,608,108	10,635	410	11,045
1907.....	2,627,069	18,912	1,049	17,961
1908.....	2,649,995	22,014	912	22,926
1909.....	2,664,241	13,945	801	14,246

LACK OF IMMIGRATION.

Spontaneous immigration is lacking, although it is necessary to develop the agricultural, mineral, and other resources of the country. That this immigration should be from near-by countries is impossible, for Colombia, Brazil, and Central America are confronted with the same difficulty. On the other hand, the question of food for European immigrants is serious, as the robust European requires four times as much as does the native Venezuelan of the agricultural districts, and the amounts of wheat, oils, wines, etc., to which the European is accustomed, are not easily procured in Venezuela. The small immigration that does exist is offset by emigration. The situation appears not to have improved much since the war period, but the latest census, that of 1918, is not yet complete. In 1918 emigrants numbered 5,841 and immigrants 6,153; in 1919 emigrants 12,879 and immigrants 12,433.

Since 1909 the yearly increases in population have been as follows:¹ 1910—28,091; 1911—30,310; 1912—11,797; 1913—24,650; 1914—24,988; 1915—12,904; 1916—9,589; 1917—20,359; 1918—8,308; 1919—20,590.

In 1894 a central board of immigration was formed by decree of the Ministerio de Fomento (Development), with subordinate boards throughout the Republic. Immigrants were to be introduced into

¹ Memoria del Ministro de Fomento, 1920, p. 244.

the country by means of contracts with societies and companies or with the State governments, to be contracted with as colonists on waste lands or under the direct supervision of the Government. Undesirable persons were to be excluded; others were to have their expenses paid by the Government and to have portions of Government lands assigned to them. Such immigrants could not be held to service by contractors for more than four years; and the maximum period was less for artisans and industrial workers, actual money being paid for the services. Occupied lands could be paid for after four years, and a clear title would be given by the Government if the settler showed sufficient industry. A certain amount was to be set aside in the national budget for all immigration projects, and Venezuelan consular officers in foreign countries were to act as immigration agents.

The first European immigration to Venezuela after the war took place in August, 1920, when 6 Spanish immigrants arrived at La Guaira, proceeding to Maracay to engage in agricultural work. One month later another party of 17 Spaniards and men from the Canary Islands arrived at La Guaira, who, with one or two exceptions, were all would-be farmers. All these new men were immediately contracted for by wealthy landowners of the Maracay and Valencia districts.

In September 10 German immigrants arrived at La Guaira, one of them having his wife and two children with him. This party had among their numbers six agriculturists, one shoemaker, one machinist, one mechanic, and one paperhanger and decorator. In December, 1920, 38 more European immigrants arrived, some of them being Belgians.

On September 30, 1920, the Venezuelan Government approved a contract providing for colonization by Germans of a tract of land containing 70,000 hectares (1 hectare=2.47 acres) lying along the northern boundary of the State of Monagas in the extreme eastern part of the country. The colony, which was to be composed of a minimum number of 100 families, was to get 40,000 hectares, and the contractor promoting the colony was to receive the remaining 30,000 hectares. It is planned to bring over to Venezuela German immigrants who had experience in Africa prior to the war and who understand tropical conditions. The conditions of the concession provide for a town site for the colony, buildings for housing, etc.

The Government lands alienated during 1917-18 amounted to 18,715 hectares, of which 4,286 hectares was suitable for agriculture and 14,430 hectares for stockraising. By States these allotments were as follows: Bolivar, 10,939 hectares; Sucre, 2,598 hectares; Lara, 2,291 hectares; Merida, 1,215 hectares; Anzoategui, 1,098 hectares; Zulia, 575 hectares.

CENTERS OF POPULATION AND COMMERCIAL DISTRICTS.

Most of the population of Venezuela inhabits the highlands and rich interior valleys along the Caribbean coast and the higher lands in the Venezuelan Andes to the west of the States of Trujillo, Tachira, and Zulia. The most densely populated district is the

Federal District, with the capital, Caracas, which, with an area of only 1,930 square kilometers, contains 136,648 people, or 70.8 persons per square kilometer (0.386 square mile). The next most populous region is the State of Carabobo, where the density is 43.9 per square kilometer. The rich agricultural region of Valencia is in Carabobo, which is connected with the capital by the Great Railway of Venezuela. Toward the west the important centers of Maracaibo, Trujillo, Merida, and San Cristobal are located, with Barquisimeto the next most important town west of Valencia after Puerto Cabello. Except Barquisimeto, all the towns of the western mountain region named are accessible only through Maracaibo, which is the ocean shipping point for the Western Andean region, as well as for the Cucuta district in Colombia.

The following table shows the area of the Federal District and the States and Territories of Venezuela and their population according to the census of 1891 and an estimate of December, 1917. This information was obtained from the Memoria del Ministerio de Fomento for 1918, but several necessary corrections have been made in the population per square kilometer.

Administrative divisions.	Area (square kilometers).	Population.		
		Census, 1891.	Estimated December, 1917.	Population per square kilometer.
Federal District.....	1,930	113,204	136,648	70.8
Anzoategui.....	43,300	134,064	161,703	3.7
Apure.....	76,500	22,937	30,008	0.4
Aragua.....	5,881	96,151	118,685	20.3
Bolivar.....	238,000	55,744	69,938	0.3
Carabobo.....	4,399	165,156	193,234	43.9
Cojedes.....	14,870	87,935	104,424	7.1
Falcon.....	24,800	139,110	170,154	6.9
Guarico.....	66,100	193,980	220,498	3.3
Lara.....	19,800	189,624	233,152	11.8
Merida.....	11,300	85,522	115,537	10.2
Miranda.....	7,950	141,446	175,810	22.1
Monagas.....	28,900	74,503	90,439	3.1
Nueva Esparta.....	1,270	40,197	52,431	41.3
Portuguesa.....	15,200	96,045	114,496	7.5
Sucre.....	11,800	92,030	118,160	10.0
Tachira.....	11,100	101,709	135,088	12.2
Trujillo.....	7,400	146,585	185,624	25.1
Yaracuy.....	7,100	85,844	102,351	14.5
Zamora.....	35,200	62,606	75,329	2.1
Zulia.....	65,500	150,776	186,579	2.8
Amazonas.....	281,700	45,097	45,097	.2
Delta-Amacuro.....	40,200	7,222	9,243	.2
Total for country.....	1,020,400	2,323,527	2,844,618	2.8

The following table shows the principal cities of Venezuela, with their population according to the census of 1891, and their lines of commercial communication. These cities are also the State capitals, and the States in which they are located appear after the names of the cities. A more detailed description of transportation routes may be found in the section on transportation.

Cities.	Popula- tion.	Communication routes.
Barcelona (Anzoategui).....	14,089	Port of Guanta to Barcelona by Guanta Railway. Guanta is export port only. Imports transshipped from La Guaira.
San Fernando de Apure (Apure).....	6,695	By river steamer from Ciudad Bolivar, up Orinoco and Apure Rivers. Trip can be made by auto from Caracas via Villa de Cura in dry season.
La Victoria (Aragua).....	14,709	By rail from either Puerto Cabello or La Guaira.
Ciudad Bolivar (Bolivar).....	17,535	By ocean steamer of not over 1,500 tons through delta of Orinoco.
Valencia (Carabobo).....	54,387	Principal traffic by rail from Puerto Cabello.
San Carlos (Cojedes).....	10,159	Highroad from Valencia, but principal freight still by pack mule. Trade headquarters in Valencia and Puerto Cabello.
Coro (Falcon).....	10,161	Rail from port of La Vela. Export port only. Imports transshipped from Puerto Cabello by coastwise vessels.
Calabozo (Guarico).....	8,159	Pack train from Valencia. Highway not completed. Can be reached by auto in dry season.
Barquisimeto (Lara).....	27,069	Bolivar Railway from port of Tucacas, which is export port only. Imports transshipped from Puerto Cabello.
Merida (Merida).....	13,366	Imports transshipped from port of Maracaibo by lake steamer down lake and up Rio Focaltante to station Barbara, thence by rail to El Vigia, thence by pack mule to Merida. Wagon road not completed.
Ocumare del Tuy (Miranda)....	7,745	Imports through La Guaira by rail to Caracas, thence by Central Railway. Commercially tributary to Caracas.
Maturin (Monagas).....	15,624	By schooner up Cano San Juan to Guarapiche River. Customs at Cano Colorado. Thence by flat boat (3 days) to Maturin.
La Asuncion (Nueva Esparta)...	3,160	Schooners to port of Pampatar, Island of Margarita.
Guanare (Portuguesa).....	9,051	Pack train via Bocono from Trujillo.
Cumana (Sucre).....	11,471	Seaport. Export only. Imports transshipped from La Guaira.
San Cristobal (Tachira).....	16,797	Imports transshipped from Maracaibo by lake steamer to Encontrados on Rio Catatumbo. Thence over Gran Ferrocarril de Tachira to end of line at La Uraça, thence by road to San Cristobal. Business headquarters at Maracaibo.
Trujillo (Trujillo).....	10,481	Imports transshipped from Maracaibo by lake steamer to lake port of La Ceiba, thence by rail to Motatan, and thence by pack mule to Trujillo. Highway not yet completed.
San Felipe (Yaracuy).....	10,817	Pack mule and wagon road from Aros on branch of Bolivar Railway. Also communication with Valencia by new auto road, which is not as yet used for merchant traffic. Imports transshipped by coastwise steamers from Puerto Cabello.
Barinas (Zamora).....	5,354	Pack mule from either Trujillo or Merida.
Maracaibo (Zulia).....	34,740	Steamers from New York via Curaçao and coast ports of Venezuela. Only small boats, as draft is limited to 12 feet over bar at mouth of lake.

The following table shows the population (census of 1891), altitude, mean annual temperature, and death rate in 1912 of the principal cities of Venezuela:

Cities.	Population (census of 1891).	Altitude.	Mean annual temper- ature.	Death rate per 1,000.
COAST REGION.				
Maracaibo.....	34,740	<i>Meters.</i>	<i>Degrees.</i>	
Barcelona.....	14,089	9	86.7	41.5
Puerto Cabello.....	13,176	13	80.6	18.7
Cumana.....	11,471	3	79.9	47.6
Carupano.....	10,897	7	81.5	28.3
Coro.....	10,161	8	82.4	39.8
La Guaira.....	8,512	16	82.4	137.7
La Asuncion.....	3,160	8	84.2	28.0
		108	82.4	25.6
CORDILLERAS AND GUIANA HIGHLANDS.				
Caracas.....	72,429	1,042	66.7	39.3
Valencia.....	54,387	478	77.0	23.2
Barquisimeto.....	27,069	566	77.0	34.6
San Cristobal.....	16,797	825	71.6	20.9
Villa de Cura.....	15,792	556	80.6	33.2
La Victoria.....	14,109	540	74.3	25.2

Cities.	Population (census of 1891).	Altitude.	Mean an- nual tem- perature.	Death rate per 1,000.
CORDILLERAS AND GUIANA HIGHLANDS—continued.				
		<i>Meters.</i>	<i>Degrees.</i>	
Merida.....	13,366	1,641	66.2	21.2
Bocoma.....	13,233	1,814	66.8	32.9
San Felipe.....	10,817	245	82.4	30.0
Trujillo.....	10,481	800	77.0	41.3
Ocumare del Tuy.....	7,745	210	82.4	36.8
Los Teques.....	6,916	1,171	87.2	18.8
Guacipati.....	3,052	.....	86.0	21.3
LLANOS AND ORINOCO VALLEY.				
Ciudad Bolívar.....	17,535	38	84.2	27.5
Maturín.....	15,824	74	80.6	12.5
Aragua de Barcelona.....	15,680	110	82.0	20.9
San Carlos.....	10,159	180	81.5	32.0
Guanare.....	9,051	183	82.4	12.5
Calabozo.....	8,159	100	84.2	25.1
San Fernando de Apure.....	6,695	73	86.0	24.6

RACIAL CHARACTERISTICS.

INDIAN TRIBES.

Along the northwestern frontier and the less accessible regions far to the south and southwest there remain in Venezuela several Indian tribes that preserve their aboriginal customs. In general, the Indians have been absorbed by intermarriage with the Spaniards. The most powerful tribe is that of the Goajiras, whose territory extends from the Rio Hacha in Colombia throughout the Goajira Peninsula into the Maracaibo Basin of Venezuela, where there are a number of villages along the western shores of Lake Maracaibo. The Goajiras are a strong and warlike race and have successfully resisted all attempts at subjugation for centuries. They are mainly a pastoral people, possessing herds of cattle and goats. They also have fairly well-tended fields, which are worked by the women. Potatoes, corn, manioc, and yucca are grown, and also the plantain and banana, but not cacao nor coffee. The Goajiras are said to belong ethnologically to the great Carib group; but they have maintained their position, while the related tribes that also came from the Caribbean Islands have been driven southward or absorbed by the white races. The Goajiras, besides having cattle and goats, also raise very good range horses and are expert horsemen. During recent years these Indians have been coming into the villages of Lake Maracaibo in increasing numbers and many of them become good workmen and are employed on the sugar estates along the lake and in and about Maracaibo. Numbers of servants employed in houses in the city of Maracaibo are Goajira Indian women.

About 30 other tribes have been classified in Venezuela, and their remnants still inhabit the forests along the Rivers Caroni, Parana, and Caura and in the regions of the upper Orinoco and its tributaries, notably the Ventuari. The Andine Indians are still among the best-formed and most intelligent aboriginal natives of Venezuela and retain many of their native industries such as the cultivation of corn, manioc, and yucca; the manufacture of fibers from the moriche palm for cloth, of simple earthenware, and the like. The river Indians make very good hammocks, which are brought down the rivers by

the rubber traders. For weapons they use the bow and arrow and the blowpipe with poisoned arrows, treated with the concentrated congealed sap of *Strychnos toxifera*, called "curare." All are skillful canoemen, fishermen, and hunters. During colonial times Spanish priests penetrated the Guiana and Orinoco regions, even establishing Indian missions as far up the Orinoco as Esmeraldas, near its headwaters. Now this territory is almost unknown except to a few bands of rubber hunters. With the exception of the Goajiras and those living along the lower Orinoco, the Indians of Venezuela have little contact with civilization and their numbers are said to be much less than is generally supposed.

THE NEGRO ELEMENT.

Until 1854 Negro slaves were imported into Venezuela. In Venezuela, as in other Spanish-American countries, there has been a gradual mixture of the three elements—Spanish, Indian, and Negro. The Negro infusion is more pronounced throughout the coast regions; in the Andean region to the west the Negro has not penetrated to any great extent, the blood being Spanish and Indian and the people of very different type from those of the coast towns. To-day the mixture of Indian and Negro is still going on, there being considerable immigration from the West Indies; many West Indian Negroes are found in all the coast towns. The better class of the people of Venezuela are made up of the descendants of the old Spanish families, in many cases mixed with Indian blood.

FOREIGN COLONIES.

Caracas, Maracaibo, and Ciudad Bolivar, the principal commercial cities, have fairly large foreign colonies composed of Germans, Syrians, Spanish and Moroccan Jews, a few Italians, French, English, and Americans—the last being less numerous at present than the representatives of other nations. The largest representation is that of the Germans, who have been in the country for years engaged in trade; the largest commercial houses are German. The Syrians are all in the dry goods trade; many have large stores and are heavy importers of textiles and general merchandise. French and Italians are in trade, principally in fancy dry goods, styles, clothing, etc. The English colony represents the managerial forces of the British harbor and railway companies and banks, the public utility corporations, such as the Caracas Tramways, and the cattle and meat-packing industry. There are also several large British commercial houses doing a general commission and merchandising business. There are a few Americans in trade, and the establishment of American branch banks has brought many more Americans into Venezuela in recent years. Many Americans are also in the country districts, principally in the Maracaibo petroleum region, engaged in oil work. About 60 Americans are in the Maracaibo region, and the number is rapidly increasing.

All foreigners are well received in Venezuela and take part in all social life, and there is a free field in business; in fact, foreigners receive many special attentions and are objects of special consideration throughout the country as a rule. The most powerful foreign influence is German. German commercial houses have long been es-

established in the country, and Germans have permanently identified themselves with the people by intermarriage with some of the oldest and best-known Venezuelan families. The largest railway in the country was built by German capital and is still operated by the Germans, and the largest commercial houses are German. After the close of the war many young Germans, formerly connected with German business houses in different parts of Venezuela, returned to the country to take up their employment and again identify themselves with the business and social life of the people.

German firms in Venezuela did not feel the restrictions imposed by the war as in other Latin American countries. They were able to continue their business in some fashion and collect great quantities of cacao, hides, and coffee, which were held and sold at very high prices just after the armistice. The very export restrictions worked in their favor by forcing them to hold export products until after the armistice, when much higher prices were obtained.

The foreign colony of Caracas is made up as follows: Americans, 75 (banking, petroleum, trade); Germans, 125 (trade); Porto Ricans, 25 (trade); Syrians, 30 (trade); Italians, 45 (trade); French, 30 (trade, tailoring, etc.); English, 40 (trade, public utilities, cattle, etc.). This estimate of the foreign colony does not take into account transients nor traveling salesmen.

Ciudad Bolivar has a small foreign colony, its commerce being principally in the hands of Syrians, Corsicans, and traders from the West Indies.

In the Maracaibo region and in Cucuta, Colombia (tributary to Maracaibo), the Germans constitute the most numerous and influential foreign group, there being approximately 60 Germans of permanent residence in these two places, all engaged in trade. Some of the largest Venezuelan houses in Caracas and Maracaibo, the two great trading centers of the country, are either owned or controlled by German interests.

ECONOMIC AND SOCIAL CONDITIONS.

As in other Spanish-American countries, most of the people in Venezuela (estimated at 70 per cent of the total) receive low wages and have low purchasing power. This class is composed of the people whose blood is Indian and Negro, the latter predominating in the coast regions.

There is a numerically small middle class in whose veins flows a greater percentage of Spanish blood and who are the artisans, craftsmen, etc., of the country and often occupy important clerical positions. Next in number come the wealthy people, who are bankers, merchants, professional men, and the governing class, many of them direct lineal descendants of the old Spanish colonial families. Many of this class are educated in Europe or the United States.

Prior to the war the foreign contact of this upper class was largely with Europe, principally France and Germany; the schools of medicine attended were French, and the engineering, mechanical, and commercial schools German. During the war, Venezuela, like other Spanish-American countries, was forced to seek supplies in the United States, and Venezuelan business men visited the United States in greater numbers than ever before. The result has been a

better acquaintance and a sincere liking and admiration for American institutions and methods. The Mecca for the Venezuelan traveler is no longer Paris, London, or Hamburg, but New York, and young men are being sent to the United States in increasing numbers for higher education and instruction in the sciences. Over half of the people of the better class that one meets in Venezuela are either talking about their recent trip to New York and the United States or are planning to go there in the near future for a tour, business, or education. American works on engineering subjects are beginning to be seen in increasing numbers in the bookstores.

PURCHASING POWER OF THE POPULATION.

Taking the high year of 1920, and placing the total population at the estimated figure of 2,844,618, and the total imports of foreign merchandise of all kinds at 308,751,964 bolivars (\$59,589,129 at par) for the same year, the per capita purchase of foreign goods and materials amounted to 108.54 bolivars, or \$20.95 (at par). This is a high average as compared with other Latin American countries where similar conditions obtain.

Of the total population, as has been said, 70 per cent possess a very low purchasing power. Estimating this 70 per cent of the people as numbering 1,990,000 in round figures, whose purchasing power for foreign-made goods can not be placed higher than \$3.60 per year, it will be seen that the percentage taken by the smaller middle and upper classes is fairly high, denoting prosperity and a high percentage of consumption of imported goods of many kinds. Exports for 1920 amounted to 168,038,854 bolivars (\$32,431,499), or 59.07 bolivars per capita, equal to \$11.40. The per capita production of exportable products and per capita consumption of foreign goods are considerably higher in Venezuela than in either Colombia or Ecuador.

Three factors contribute to the higher per capita production of Venezuela as compared with the neighboring Republics: (1) The proximity and easy access of the rich interior lands to the coast and the seaports; (2) better individual effort, evidenced by the many small articles of local manufacture; (3) exports, averaging about \$550,000 annually, that originate in the Cucuta region of Colombia and are exported through Maracaibo as Venezuelan exports.

The largest centers of consumption of foreign goods are Caracas, Valencia, and Maracaibo. Caracas is the commercial distributing center for the rich Valley of Caracas and the country to the south and southwest and also to the east as far as Maracay; Valencia, for the productive agricultural and cattle-raising region of the States of Carabobo and Yaracuy; and Maracaibo for the entire Andean region, including the populous centers of San Cristobal, Merida, and Trujillo and also the Cucuta district of Colombia. Both Caracas and Valencia have a considerable manufacturing industry also. Ciudad Bolivar is the trading center for the Orinoco Valley and its forest products of rubber, balata, chicle, balsams, tonka beans, etc., and also of hides and gold.

LIVING CONDITIONS.

Unlike the neighboring Republic of Colombia, as a general thing Venezuela does not present a very wide division of property, the rule

being large landed estates. This is especially true of the central part of the country around the capital, and also in the Valencia region. To the west, in the Andes of Tachira and Trujillo, there are many small coffee and cacao planters.

RESIDENCES OF WEALTHIER CLASSES.

All the centers of population present great contrasts in manner of living. The capital, Caracas, possesses a great number of splendid suburban residences, veritable palaces, surrounded by beautiful gardens and grounds. The interiors of these residences and of those of the wealthier class in the city proper are very fine, containing not only modern conveniences but many evidences of culture and art. The prevailing taste is French, not English nor American. The great "sala," or formal parlor, is always like a formal French drawing-room, with high ceiling, heavy hangings, heavy lace curtains with tapestry overdrapery, upholstered furniture and porcelain statuettes, great French gilt pier mirrors, and the like. The monthly expenses, including food, servants, electric light, telephone, etc., average 2,000 bolivars (\$386) for an establishment of this kind in a better residential district of the city. This estimate allows for five servants—cook, laundress, housemaid, dining-room maid, and nurse girl. If an automobile is kept—and many of the wealthy families have cars—its cost and the chauffeur's salary are extras; few drive their own cars. Fees for doctors, lawyers, etc., are considerably higher in the larger centers of Venezuela than in the United States.

All the larger cities, especially Caracas, have drives in the suburbs where are found the homes of the rich merchants, professional men, and members of the Government. These houses are detached and are surrounded by gardens, sometimes protected from the street by high masonry walls, but more often set off only by an ornamental iron fence set on a brick or cement coping. These houses are modern in construction and architecture, the better ones being built of reinforced concrete with steel framing or native kiln brick (unpressed). The brick houses are stuccoed. Wall paper is used in the parlors, and the dining room and bedroom walls are painted, often in fancy designs and rather too vivid colors. There are usually enough windows and doors for good lighting and ventilation, except in the back rooms and kitchens.

Even in the better houses no stoves are used except for cooking. Heating appliances are unnecessary on account of the semitropical climate in Caracas and the low country. The kitchens are equipped with a masonry arrangement for burning wood charcoal. This is the universal fuel; it is brought in from the neighboring country in small mule carts and on burros by charcoal vendors, who go from house to house making deliveries. In Trujillo, Bocono, and Merida, where the higher elevation and proximity to the snow-capped mountains make the winter months much cooler, the houses are still built on the old Spanish plan, with central "patio," or court, and no interior heating is provided, although the evenings in November, December, January, and February are chilly.

The old-style houses used as residences in the older part of the cities are all of the old Spanish colonial architecture with the central patio. There is usually the main room (the sala), in front on the

street; then a small reception room, roofed but open to the patio, with the bedrooms on one side and the dining room just back of the patio; then come the kitchen, sometimes a servant's room off the latter, and the bath and laundry under a separate roof on one side of the back patio, which also contains the "aljibe" for storing water for domestic purposes, washing, etc. These houses contain 7 to 10 rooms, two or three bedrooms being over the dining room in the rear and overlooking the back patio. These upper rooms are the most desirable, as they are more nearly free from dampness in the rainy season and have much better light and ventilation; most of the lower-story rooms have no other opening than the door leading out to the patio, and are dark and damp even on bright days. It is difficult to secure a good room for an office in the old residence districts of Caracas, on account of the lack of sufficient light, unless artificial lighting is installed and used during the day.

SERVANTS AND WAGES.

Servants are plentiful and very cheap. The best are Martinique Negro or mulatto women, or Negroes from Barbados, Trinidad, or Jamaica. The Martinique women are famed as good cooks and the majority are bright and intelligent. Domestic service is the principal outside occupation of the poorer classes. Numbers of girls and women are also employed in the cigarette factories. A cook receives 35 to 60 bolivars (\$6.75 to \$11.60) per month; a first-class laundress who can do starched collars, shirts, etc., receives about \$6 per month; a maid or a nurse girl, about \$4 per month. The cook does the marketing also, from a fixed allowance in money every day, the dining-room maid getting and serving the petit déjeuner. As a rule, each child in a wealthy family has its own nurse.

RENTS.

In Caracas a furnished residence containing parlor, three rooms, dining room, and kitchen downstairs and three rooms upstairs, located in a fairly good neighborhood, rents readily for an equivalent of \$150 per month on a six-months' lease. Nothing desirable of this size could be obtained unfurnished for less than \$100 per month. Rents are lower in the interior, but the houses are not so good and nearly always lack modern conveniences.

COST OF FOOD.

First-class boarding houses, or pensions, which are used by travelers more than the poor hotels, charge for room and table board 14 to 24 bolivars (\$2.70 to \$4.63) per day, or for the more desirable rooms, like those in the upper floors, as high as 40 bolivars (\$7.72). The cost of the average daily food supply for a family of six people with four servants amounted to 31.90 bolivars (\$6.15) in August, 1920, the items being as follows:

	Bolivars.
1 fish, weighing about 1½ pounds.....	3. 50
1 kilo pork.....	5. 00
8 kilos potatoes.....	2. 40
9 eggs.....	3. 00
1 aguacate (alligator pear).....	0. 50

	Bolivars.
1 kilo beef roast.....	5. 00
6 oranges.....	1. 00
1 dozen bananas.....	0. 50
3 plantains.....	0. 50
1 dozen peaches (for dessert).....	0. 75
Vegetables.....	1. 00
Lard.....	1. 00
Salad materials.....	0. 75
4 dozen wheat-flour rolls.....	4. 00
1½ liters milk.....	1. 50
Coffee for three meals.....	1. 50
Total.....	31. 90

MISCELLANEOUS EXPENSES.

Electric-light bills, payable twice a month, would run about 160 bolivars (\$30.90) per month. The telephone costs 15 to 20 bolivars (\$2.90 to \$3.85) per month. Commercial service, of course, is higher.

HOMES OF THE POORER CLASSES.

The poorer classes live in small houses of two or more rooms in the poorer quarter of the city and are finding conditions more and more difficult as prices of necessities continue to advance in all parts of the country. These smaller houses have no electric light, piped water, or other conveniences. Water usually has to be carried from public fountains in the street. Recent sanitary regulations in Caracas, which have been followed by similar regulations in the capital cities of the States, require property owners to use only cement for floors and to install water piping, modern toilets, and water tanks of metal with hinged covers and forbid the use of thatched roofing. The high cost of materials and modern fixtures for the repairs made necessary by this law works a hardship upon small house owners who have acquired their property under difficulties, since there is no Government agency to help small property owners with long-time loans.

There is strict sanitary inspection in Caracas and some of the larger cities of the States. Heavy fines are imposed for open garbage cans, uncovered water tanks, and all collections of dirt. Every house is entered by two inspectors periodically. In Caracas garbage and refuse are collected in covered autotrucks, Ford chassis being used, equipped with pressed-steel covered bodies. With the completion of the extensions to the aqueduct, now inadequate to supply the city with water, and of the new cement sewerage system that is under rapid construction, malaria and typhoid should almost disappear from Caracas. At present the city water can not be used without danger. Distilled water is served in the better hotels, pensions, and private houses. A campaign is being carried on by the Government's Sanitary Department against the house fly, which is a terrible pest in Caracas and the surrounding country. The great difficulty encountered is, of course, ignorance of sanitation. However, all agencies, including the church, are cooperating for popular education in this subject. Pure milk is distributed gratis to those who can not pay and flytraps are sold at cost to the general public.

In the poorer houses the furnishings are of the simplest—a few locally made chairs, a rough table or two, and canvas cots or perhaps

wooden bed, a small fancy mirror or two, and a few cheap colored prints. Imported furniture and house furnishings are used only by the wealthy. Good local shops are found where excellent furniture is made out of the native hardwoods. Several shops specialize in fancy upholstered furniture, also made locally, the covering materials being imported from France and the United States.

RESORTS AND AMUSEMENTS IN CARACAS DISTRICT.

The resorts near Caracas are the seaside hotel at Macuto, connected with Caracas by automobile highway and the La Guaira Railway, which is operated by electricity from La Guaira to Macuto (4½ kilometers). The trip is usually made by automobile over the highway, which winds and twists down the mountain to sea level, the round trip (the same day) being made for 150 bolivars (\$29). The bathing is not good. The hotel accommodations are fair but the food is not so good as in Caracas. The main attraction is the large cement-paved promenade along the water front.

The town of Los Teques, 27 kilometers from Caracas by either the Gran Ferrocarril de Venezuela or automobile road, has an elevation of some 425 feet more than Caracas, being situated in the hills of the Coast Range at about 3,800 feet above sea level. It is an attractive village of about 6,000 people and there are many fine "villas" where the wealthy families of Caracas go to spend the summer (rainy-season) months. There is a park here laid out by the railway company (Gran Ferrocarril de Venezuela) and excursions are run over the railway from Caracas over Sunday. Many parties make the trip by automobile over the highway, the distance being just under 30 kilometers from the center of Caracas. The only hotel in Los Teques is the La Suisa, but there are a few pensions.

Public carriages and automobiles for hire in Caracas are good and the charges reasonable. A first-class carriage can be hired for 6 bolivars (\$1.16) per hour and a seven-passenger car costs 20 bolivars (\$3.86) per hour in and about Caracas. One of the principal diversions is to drive on the "Paraiso" in the late afternoon.

Spanish theatrical companies come to Caracas frequently, and there are four good moving-picture theaters in the city. There are also bullfights on Sunday afternoons all the year round. There are a number of good tennis courts in the environs, and a new golf course is being worked out by members of the foreign colony. Horse racing in the National Hippodrome goes on during the fall and winter months.

CONDITIONS IN SMALL TOWNS AND ON RANCHES AND LLANOS.

On the farms and ranches of the interior and in the many small towns and villages, living conditions are primitive among the lower classes. Town houses are built of adobe or soft brick and the better ones have either tiled or flat roofs, but most of them are palm-thatched. On the outskirts houses are made of wattled poles plastered with mud, being mere huts, often of only one room, the simple cooking being done in the open air under a small lean-to roof attached to the house. The houses on the large ranches and haciendas occupied by the peons (laborers) are of this class of huts; the men build them themselves, using only the machete for the entire job.

These classes are large consumers of imported and domestic cotton cloth, drills, etc., which, except medicines, cheap perfumes, ribbons, and other simple ornaments, and the universal machete, are about the only articles of foreign manufacture purchased. Another important exception is the sewing machine. It is quite a surprise to the traveler to find a new foot-power machine under a thatched roof in some out-of-the-way mountain or plain village of only a few families. These machines are often brought in on mule back and are usually purchased on the installment plan from one of the many agencies. Hand-power sewing machines also are fairly common and are often preferred on account of their small bulk and easy transport from place to place.

In the great llanos, where the principal industry is cattle raising, the primitive living conditions can not always be taken as an indication of the people's wealth. Only gold coin is accepted by the llaneros for their cattle; they refuse paper money of all kinds and take very little silver. This gold coin is hoarded, and a llanero, dressed like his peons or cowboys, may have thousands of dollars in gold buried somewhere about his premises. The men of the great plains are keen traders, very suspicious of all new things and ideas they do not understand, and constitute a class by themselves in Venezuela. Gold has been hoarded for years in the llanos and there is no way of estimating this constant drain from circulation.

With the advances being made in education in Venezuela, together with the prosperous condition of the country due to the high prices obtained for exports of coffee, hides, and cacao, during and just after the war, the people are progressing. Their per capita production is already higher than that of either Colombia or Ecuador, and year by year they will be greater consumers of imported materials and articles.

PROGRESSIVE TENDENCIES.

The wealthy Venezuelan has traveled, knows one or more languages (usually French or English or both) and has a good idea of Europe and of the United States. Those engaged in commercial pursuits are keen observers of foreign markets (quick to take advantage of changes in New York, London, or Hamburg quotations), experts on exchange, and keen traders, knowing well their own markets and local and national conditions. Commerce has suffered in the past from the effects of revolution and internal political strife, but over 10 years of peace and security, combined with the sound financial condition of the Government, have accomplished wonders for the development of trade.

The mechanics and artisans, the small shopkeepers, clerical assistants, etc., constitute the middle class. Many of the younger men have worked in shops and factories in the United States or in Europe, and are fair mechanics. For example, one was found in Caracas who could make parts of the delicate mechanism of a kodak shutter and even adjust the timing apparatus. There are several good garages in Caracas, Valencia, Barquisimeto, and Maracaibo, where repairs are made, lathe work being done and broken parts replaced with new ones kept in stock. The electric-light companies use native linemen, installation men, etc., about the only foreigner being the

superintendent in charge who has trained his employees. A great step forward has been made with the recent establishment in Caracas of a manual training school.

In Caracas, Valencia, and Maracaibo one can hardly enter any of the large retail stores without being addressed by some clerk in English. Nearly all the young men of Venezuela are studying English.

The lack of sufficient population makes increased production of agricultural products for export impossible without better organization on the part of the landowners and the adoption of modern methods with the use of tractors and other machinery. Many of the landowners understand this condition and are much interested in the machinery question. The Valencia district has some forty-odd gasoline farm tractors (Fordsons) in use, and still greater progress in this line is evident for the near future. Gasoline from the native refinery in the Maracaibo district (San Lorenzo) costs 60 cents per gallon in Caracas or Valencia, but increased production, at present impossible on account of the lack of means for cheap coastwise transportation, would reduce this price. If gasoline could be obtained at about 30 cents per gallon, the use of gas tractors would prove economically possible on a larger scale. Enough automobiles have already been imported to insure a supply of men trained in handling these tractors for farm use. The ranch owners have had two very prosperous years and are investing their surplus in new and more modern equipment. The rich agricultural region of Valencia is capable of large production of cereals and cotton, though at present its yield is just about sufficient to supply the domestic demand and leave a small surplus of corn and some lard. With increased production, it could do a large business in foodstuffs with the important islands of the West Indies.

Venezuela merchants are very progressive. The daily and weekly papers are used freely for large-scale advertising, show windows are good, and the stores are increasing their use of glass showcases and modern fixtures for displaying merchandise. The older buildings are being remodeled for stores on a much more modern plan, furnishing better lighting during the day. In short, on every hand there is felt a spirit of advancement. Printing work and lithography in the larger cities is on a par with the best seen in South America, and Caracas boasts one of the largest and most modern paper and printing plants of the continent. Venezuela also has two paper mills, among the first of their kind in South America.

The two prosperous years following the war have given the country new commercial life and stimulus. Business in general was at its height early in 1920 and improvements of all kinds were under way. Education is being modernized along practical lines. Banking has been brought up to a high standard with the establishment of foreign banks in the country since 1917 and with trade facilitated and actually created thereby. Venezuela may be termed one of the most advanced of Latin American countries.

Improvements of many kinds are being planned by the Government, which has a large gold surplus to make these plans effective. The highway-construction program of Venezuela is the most extensive ever undertaken in Latin America by any nation. The west-

ern central highway from Caracas to San Cristobal is 1,000 kilometers long; at present it is about half completed and the work is progressing rapidly. Twenty-four wireless sets are being installed at strategic points for rapid internal communication, and the bids are out for a transatlantic set, which will reach all the European capitals and the United States, as well as Buenos Aires in South America. The modern concrete sewerage system of Caracas is about 50 per cent completed and the aqueduct is being extensively repaired and extended. Few streets of Caracas remain to be paved with concrete. The electric street-railway system of the capital is adequate for its present needs, and extensions into the surrounding country are aiding materially in the city's expansion. The example of the capital is being followed by the other cities of the country. Many small towns of Venezuela have electric-light service; and telephone service is being extended even to the ranches and small villages of the interior, although most of these lines, except the Caracas system and those of the Government, are local private enterprises. Concessions have been granted for the construction of railways to open up the great coal fields of the west and to give access to the rich gold fields of the El Callao region toward the Guianas from Ciudad Bolivar.

The policy of the administration is one of strict economy in Government expenditures, prompt service of the internal and international debt, and practical constructive measures for the development of commerce and the natural resources of the country. The Ministry of Foreign Relations has sent a number of commercial attachés to the large capitals of the world, and this ministry is also publishing a weekly bulletin (*Boletín Comercial é Industrial*) containing commercial and industrial information and data of interest to commerce. The Government is also much interested in the development of the cattle industry. Experimental dipping pens are under construction at Maracay; and it is only a question of time when dipping of all live stock will be made compulsory throughout the country to combat the fever tick and other diseases that now cause considerable loss and damage. Mention should also be made of the establishment in 1917 of the Government agricultural station near Caracas and of the new one near Maracay, where good work is being done in practical demonstration, the circulation of seed, and the reclamation of waste lands. One of the agricultural experts of the United States Department of Agriculture was contracted with for this work. Twenty-four French airplanes were purchased by the Venezuelan Government during 1920. A new deepwater harbor on the Caribbean is being planned by the Government at a point most accessible to the cattle lands of the llanos to the south of Valencia and Maracay.

Certain reforms have been put into effect concerning the import tariff, which has also been translated officially into English for the assistance of exporters to Venezuela. Other tariff changes beneficial to commerce are being considered.

COMMERCIAL DEVELOPMENT.

There are enough importing houses, wholesalers, and large retail merchants to take care of the merchandise demands of the people in all sections and local competition is very keen. The country is

visited by numbers of traveling salesmen, principally American, English, and German, the last named very numerous and active recently. A large number of new American exporting firms are sending men to Venezuela, and several new resident offices for trade representation are being established, especially in Caracas and Maracaibo. The banking facilities are more than adequate for the needs of the country and are the principal factors in foreign-trade development on a permanent basis.

In considering the future of trade with Venezuela, it may be predicted that steady business with the country will be a matter of attention to the details of exporting, such as packing, billing, packing lists, declarations, marking, credits, etc.; and most important of all, the intensive cultivation of the personal relation.

Venezuela's volume of production for export can not be materially increased without immigration or the application of machinery to industry. Immigration on any large scale is impossible under present world conditions without Asiatic immigration, which is not acceptable. The solution, then, is machinery for agriculture. In the meantime Venezuela's market is subject to seasonal conditions having to do with the volume and price of the coffee and cacao crops and the price of hides. The eastern part of the country, tributary commercially to Ciudad Bolivar, is dependent upon the exports and prices obtained for rubber, balata, chicle, and other forest products. The extension of the cattle industry in the eastern llanos as far as the edge of the delta country, with the establishment of the new packing house at Barrancas, is doing much to develop trade in this region, and the opening of the old gold fields in and about the famous old mines of El Callao to the southeast of the Orinoco delta country will still further stimulate trade. An electric line is planned for the development of this rich gold-producing region, which would make that part of the country, at least, less dependent upon the fluctuations of the coffee, rubber, and cacao markets.

LABOR CONDITIONS.

Except for domestic servants and operatives in the cigarette and textile factories of the larger cities, labor is scarce in all parts of Venezuela, especially the more developed agricultural regions, such as Valencia. Petroleum companies find great difficulty in recruiting sufficient unskilled labor for the work of the oil fields. The population seems to gravitate to the larger cities, where there is a plentiful supply of domestic servants and cigarette and textile workers. The seaports also have sufficient workers for handling cargoes, their numbers being recruited from the West Indian immigrants numbering 6,000 to 11,000 Negroes annually. This immigrant population is, however, more or less floating in character. The Negroes speak a number of languages more or less fluently in a sort of patois and are well acquainted with most seaports of the Caribbean coast and of the islands. While good workers, they do not like to go into the interior and can not be held on haciendas for any length of time, preferring the seacoast.

At La Guaira stevedores average 40 cents per hour, with 60 cents for overtime, but at Puerto Cabello and Maracaibo the rates are

lower, being 1 bolivar, or \$0.193, per hour in the latter port. Common laborers receive an average wage of 3 to 4 bolivars per day in the interior, and on farms, especially in the llanos and Andean regions, wages average about 25 per cent less. It is not easy to get laborers to go from one place to another or to get them to do work to which they are not accustomed. Along the coast it is easy to make a living by fishing and cultivating a small patch of coconuts or bananas or sugar cane. Efforts to absorb some of the surplus labor of Caracas in the agricultural fields of Valencia and Maracay have failed on account of the climatic conditions, the men from the higher altitude getting malaria badly and returning to Caracas after a short time. The Lake Maracaibo region of the west, the vicinity of Caracas, and the low lands of the coast, the llanos, and the Valencia-Maracay districts have a bad name among the men, and they can hardly be induced to go there even by offers of higher wages.

Wages vary, depending upon the supply of labor in any given place. The Department of Public Works adopted the following schedule in 1917 for wages per day and this has also been adopted for all railway and construction work by the larger companies: Overseers, 8 to 10 bolivars (\$1.54 to \$1.93); masons, 6 to 8 bolivars (\$1.16 to \$1.54); carpenters, 6 to 8 bolivars (\$1.16 to \$1.54); foremen (in charge of common labor), 5 to 6 bolivars (\$0.97 to \$1.16); laborers, 3 to 4 bolivars (\$0.58 to \$0.77); boys, 1.50 to 2 bolivars (\$0.29 to \$0.39). Owing, however, to the building of a number of fine houses in the suburbs of Caracas and other large cities, the great amount of Government road work, and the construction of the new aqueduct, as well as the forced remodeling of many old dwellings to comply with the new sanitary regulations, labor has been scarce during the last two years, especially skilled labor, such as carpenters, painters, and masons, and the wages paid have sometimes been more than 25 per cent in advance of the figures given.

The number of working hours per day is nine—four in the morning and five in the afternoon. In almost every industry, and more especially in agricultural work, the "tarea," or task system, is used. To each man is assigned a certain amount of work per day, the allotments being fixed by custom. When finished with his assignment, the peon can either leave the work for the day or do extra work for which additional payment is made.

There are no labor unions or laws protecting workmen against accident. Industrial insurance is unknown.

The only serious strike was that of the men of the La Guaira Harbor Corporation and of the La Guaira-Caracas Railway in 1918, caused by the failure of these companies to increase wages in proportion to the rapidly advancing cost of living. The strike was soon won by the men and wages were raised by approximately 25 per cent. This action involved an increase in the operating expense of the companies of about 5 per cent and amounted to an average annual total of 51,571 bolivars (\$9,953).

Negro labor is recruited in Barbados, Trinidad, and the Guianas for the gold fields of the El Callao region and for the asphalt deposits of the Bermudez district in the delta region. A plentiful supply of good labor from Martinique, Jamaica, and other West Indian islands

could be obtained for any large undertaking, such as the construction of a railway, new docks, or harbors. In the Maracaibo Basin region, labor is also recruited from the Goajira Indians living to the west of the lake in Venezuela and Colombia. A number of these Indians are now employed in the sugar plantations at the southern end of Lake Maracaibo, where climatic conditions are very bad and tropical diseases prevalent. The old system of peonage still exists to some extent in the outlying regions, though it is illegal.

EDUCATION.

Venezuela possesses a well-equipped Government department of public instruction. Primary education is free and compulsory. It is maintained by the Nation, State, or municipality. The latest records show that there are 1,500 elementary schools in Venezuela, with an attendance of 50,000. The establishment of rural schools in the neighborhood of factories has been urged recently for the benefit of the working classes. Migratory rural schools of this nature have been already introduced into Trujillo by Federal authorities, and industrial schools have been started in Mamo, El Encantado, and Caracas by municipal and State authorities.

There are 102 secondary schools, 58 for boys and 38 for girls, the others admitting both sexes. These may be grouped into federal colleges and normal schools, annexed to the federal schools located in Valencia and Caracas. There are 34 national schools of higher education, and 21 such schools subsidized by the Government. Two German schools and one Spanish school are located in Caracas.

Venezuela has six national universities—Central University of Caracas, Merida or "Los Andes," Valencia, Maracaibo, Ciudad Bolivar, and Barquisimeto. The universities have faculties of political science, medicine, philosophy, literature, and pharmacy, each of which courses requires six years for completion except pharmacy, which takes two.

There are also commercial schools in Caracas, Maracaibo, Ciudad Bolivar, Carupano, and Puerto Cabello; a school of engineers in Caracas, a school of naval instruction at Puerto Cabello, and the Simon Bolivar School of Political Science at San Cristobal, as well as schools of natural science, music, declamation, modern languages, etc. An Academy of Languages and a National Seminary for History are in operation. Caracas has a Catholic Seminary for Theology and Canonical Jurisprudence, a Polytechnic School, a National Library, and a National Museum. An astronomical observatory is connected with the School of Engineering, and a Pasteur Institute has been established.

During recent years Caracas has incorporated departments for engineering works and the administration of budgets, improved the laboratories in physics, mineralogy, geology, botany, and zoology, enlarged the library, and improved the school of medicine. The School of Arts and Crafts for men at Caracas is destined to be of great utility and practical importance, having already enrolled 501 students. Cartographical work in the preparation of maps is particularly noteworthy. The meteorological stations in Merida, Maracaibo, and Calabozo have also rendered signal service.

The following table shows the number of schools, according to type, in the years 1909 and 1918:

Instruction of first grade.	Number of schools.		Pupils enrolled.	
	1909	1918	1909	1918
Federal.....	1,004	829	31,850	25,623
State.....	146	246	4,723	6,736
Municipal.....	225	215	7,564	7,876
Private.....	150	118	4,011	5,290
Total.....	1,525	1,408	48,148	45,515

The budget for the fiscal year 1920-21 was 4,328,181 bolivars (\$835,339), representing an increase in expenditure for educational work. New schools have been provided for at the rate of about 40 per year, nearly all with one teacher and for primary instruction.

A number of girls' and boys' schools are conducted by the various religious orders in Venezuela, these schools obtaining about 50 per cent of the children of school age, especially those of the middle class who are able to pay the tuition fees charged. Most of the religious schools where higher grades are taught are called "colegios" and receive boarding students for the school term. These schools are recognized as preparatory schools for the Federal universities and also for the special schools established by the Government, although the Government does not contribute to their support as is the case in Colombia.

Young Venezuelan engineers educated in the universities of Caracas are in charge of the highway construction work that is being carried out on a large scale and are fairly successful in meeting the peculiar topographical and climatic conditions.

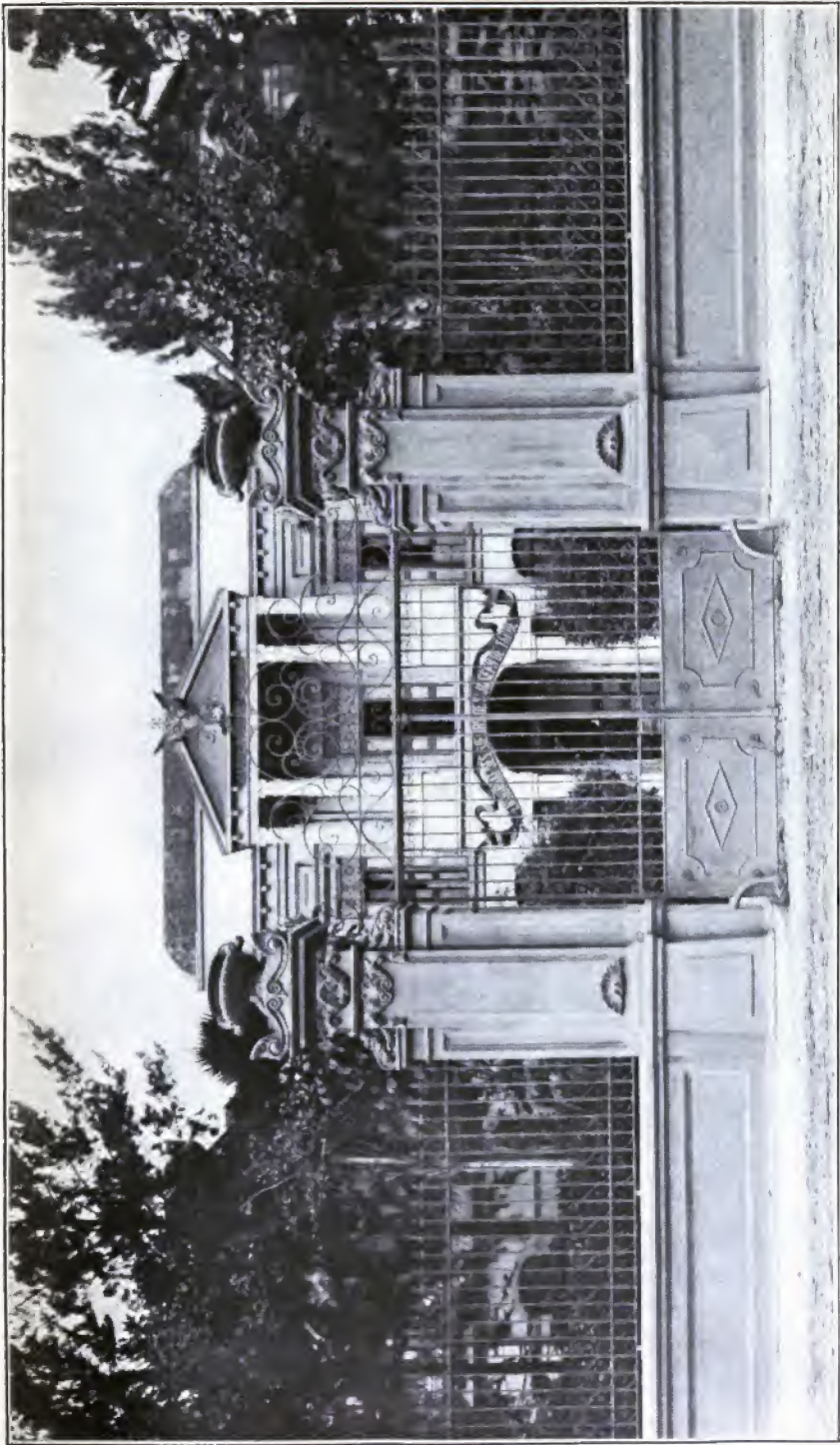


FIG. 2.—"COLEGIO DE NIÑAS" (GIRLS' SEMINARY) IN EL PARAISO DISTRICT, CARACAS.



FIG. 3.—BIRD'S-EYE VIEW OF CARACAS, LOOKING SOUTH.



FIG. 4.—VIEW OF LA GUAIRA.

NATIONAL FINANCE.

NATIONAL TREASURY.

The duties of the National Treasury include the receipt of the national revenue, the guarding of all funds pertaining to the Treasury, the making of payments authorized by the budget, the receipt and custody of fiscal specie and its delivery to fiscal administrators (art. 72). All officers intrusted with the collection or investment of national funds form a part of the Treasury Service (art. 73), with a central office in Caracas (art. 74).

In order to receive and make payments on accounts for the Treasury, there has been created an Auxiliary Bank of the Treasury, necessarily national, responsible and with sufficient resources to guarantee the Government a sufficient credit and to sustain the necessities of the Treasury. Orders for payment are drawn directly by the Minister of Finance (art. 80), and the bank is subject to the jurisdiction of the examining board and Federal tribunals (art. 82).

The General Accountant's Office functions in Caracas with the object of centralizing all accounts. There are two divisions, the board of centralization and the board of examination, each presided over by a responsible auditor, subject to the Minister of Finance (arts. 83-85).

Double-entry accounts are maintained by all offices, each being obliged to keep a journal, a ledger and inventory, etc., in which every operation either actively or passively affecting the Treasury must be registered (art. 188). All accounting offices must send to the board of centralization, within the first eight days of each month, copies of the books showing the values on the last day and all facts necessary for centralization (art. 198).

VENEZUELA'S POSITION AS STATED BY MINISTER OF FINANCE.

Following is a translation of excerpts from the introduction to the annual report of the Venezuelan Minister of Finance for the calendar year 1920, submitted to the National Congress on April 29, 1921 (1 bolivar=\$0.193):

The work of the Treasury Department for the year 1920 gives further proofs of the labor to fulfill the administrative program by which Gen. Juan Vicente Gomez has further advanced the Republic. On one side, the prosperous situation of the public Treasury, and, on the other, the organization of fiscal branches—in its legislative aspects, in its internal regulations, and in its practical functioning—form the two principal subjects treated of in this report, of which the present summary gives the most important features.

The just appreciation of the economic conditions of the country with respect to legislation on duties and taxes; the most convenient means to increase the public fortune; and the most spontaneous collaboration of the citizens in fulfilling their financial obligations—these are not the only elements that regulate the stream of tax money and direct it into such channels as will fill the coffers of the Treasury; it is the methods of collection, learnedly and faithfully applied, that will make secure the amount of the internal revenue. Of all these methods, the most efficient has been definitely established in our Treasury, being that of the direct and immediate delivery by the taxpayer to the Treasury

of the sum due for taxes or public services, which sum the administrator of national revenue liquidates according to the provisions of the law of each tax. This method was applied during the year to all taxes, with the exception of that of the national telegraphs, which is still collected in the old way through the same administrative office, with its own account separate, to be delivered to the National Treasury; there was also excepted from the modern system of liquidation the consular tax up to the middle of 1920, since it was the consular service law of the 26th of June, 1920, that included it in the new legal régime of national revenues. All other taxes during the year have been regulated by the present system of prior liquidation or by that of revenue stamps, which is used by those branches whose functions especially require this method. In this way there has been turned in, as the income from the national taxes in the year 1920, the sum of 104,887,330 bolivars, a sum never before reached in our financial annals, even when it is compared with the income of the 10 years previous, which, despite the economic confusion occasioned by the European war, were the most pleasing for our finances. The revenue movement is shown below, deducting the sums of 4,821,353, 3,633,687, 100,000, and 5,300,000 bolivars, which, in the years 1911, 1912, 1915, and 1919, respectively, corresponded to the amounts incorporated with the income as the result of the accounts of the national mint (entirely accidental receipts, which can not be included in the regular product of the national revenues):

	Bolivars.
1910-----	52,845,988
1911-----	65,100,679
1912-----	73,180,001
1913-----	58,421,713
1914-----	57,376,243
1915-----	56,039,546
1916-----	71,050,728
1917-----	63,763,010
1918-----	50,171,534
1919-----	73,617,728
1920-----	104,887,330

It is seen that the annual average in the years between January, 1910, and December, 1919, is a little over 62,000,000 bolivars; thus the annual average has been exceeded by more than 42,000,000, and the 1919 return by more than 31,000,000. In the year 1920 the internal-revenue tax amounted to 38,349,053 bolivars, which is 2,000,000 less than the sum of 40,396,195 bolivars, the product of the tax in 1920—a palpable demonstration of the fact that the steady increase obtained by the administration of this tax is on a firm footing, and that it promises to be for the Treasury a secure and sufficient fund to offset the sudden fluctuations of the income from customs duties. Following is the comparative table of these incomes for the last 10 years, with the above-mentioned mint accounts omitted:

Years.	Consular and customs fees.	Internal revenue.	Years.	Consular and customs fees.	Internal revenue.
	<i>Bolivars.</i>	<i>Bolivars.</i>		<i>Bolivars.</i>	<i>Bolivars.</i>
1911-----	50,392,962	14,707,718	1916-----	44,436,946	26,563,782
1912-----	56,601,680	16,578,322	1917-----	35,274,902	28,488,108
1913-----	44,230,823	14,190,891	1918-----	20,736,003	29,435,531
1914-----	38,366,193	19,010,049	1919-----	35,268,675	38,349,053
1915-----	34,900,419	21,139,128	1920-----	64,491,135	40,396,195

CRISIS IN YEAR 1920.

The sum of 64,491,135 bolivars, produced by the customs fees in 1920, is an increase as unexpected as it was extraordinary in a year of universal economic crisis. From that crisis Venezuela was not excepted, but by uniting the forces of the people and those of the Government we resisted it, and thus during such a serious period we maintained our vigor, the same vigor by which we obtained our prosperity and eluded danger; and when that crisis still threatens to involve us in the general upheaval, the merchant redoubles his efforts to sustain his credit and the Government evolves, continuously and wholeheartedly, administrative plans to stimulate and multiply all national activities.

This crisis which hangs over us and the civilized world should be noted in our economic history as an act of Providence for the industry and commerce of the Republic; its origin, its development, and the situation which it created, carefully considered, will demonstrate that such influence is important in the evolution of riches and national revenues. Our foreign commerce is not uniform; that is, we do not export to one country in the same or even approximately the same amount in which we import its manufactures—from which it follows that in the annual movement of commerce we are subject to opposing influences whose effect does not always equalize or turn in our favor the balance of commerce. In 1918 the customs duties, whose average annually had been 43,500,000 bolivars, declined to 20,796,003 bolivars because European commerce sent no merchandise to our ports, the United States suspended also the sending of many of the articles that it was accustomed to export to us, and, on the other hand, the price of our export products was lower and the demand small. In 1919 the victory of the Allies gave the world an unforeseen prosperity, produced mostly by the hope that with the coming of peace there would also come a recovery from the losses occasioned by war. Europe and the United States sent us then a huge quantity of merchandise. The customs duties reached the sum of 35,268,675 bolivars, and the price of our export products rose in a gratifying manner, and nearly the whole annual production could be disposed of. The internal revenue reached 38,349,053 bolivars—the total public revenue reaching the sum of 73,617,728 bolivars. In 1920 the European nations had already completed their financial program with the object of replacing the losses of the war, which program consisted in buying only the absolute necessities and in selling the largest possible amount of merchandise. The prices of coffee, cacao, hides, and other of our products fell rapidly, and the demand was almost nil. At the same time the productive centers of Europe and the United States filled all the Venezuelan orders that they had refused during the war and those that had been given when the armistice was signed. Venezuelan commerce then had to prepare warehouses for the large quantity of unexpected merchandise, and to raise funds to pay customs duties and drafts for the foreign creditors. The merchandise was not left in the warehouses nor the foreign creditors left unsatisfied. The mercantile situation of that year was dominated by the United States, for from that country came half of our import, but the United States bought from us the lesser part of our export, thus causing the huge rise of the dollar and the consequent depreciation of other moneys, since the United States, besides being the creditor of Europe to-day, as it is in the case of Venezuelan commerce, has come to be also the liquidator of our banking business, and perhaps of that of all Spanish America. The following data concerning the decline of exportation in 1920, the increase in importation, the commerce with the United States and other nations, the variation in the price of our national products, and the increasing value of the dollar will show at a glance the real causes of our mercantile crisis:

FOREIGN TRADE.

Years.	Imports.	Exports.	Years.	Imports.	Exports.
	<i>Bolivars.</i>	<i>Bolivars.</i>		<i>Bolivars.</i>	<i>Bolivars.</i>
1919.....	177, 173, 811	258, 712, 628	1920:		
1920:			From (or to) other		
From (or to) the			nations.....	156, 438, 735	87, 400, 393
United States ..	152, 313, 229	80, 638, 461	Total for 1920...	308, 751, 964	168, 038, 854

PRICES PER 100 KILOS OF EXPORT PRODUCTS.

Months.	Coffee.	Cacao.	Hides.	Balata.
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1919:				
January.....	180	140	260	583
February.....	200	160	300	626
March.....	210	180	310	635
April.....	210	180	320	652
May.....	230	220	350	670
June.....	290	260	380	730
July.....	300	280	380	765
August.....	300	280	450	790

Months,	Coffee.	Cacao.	Hides.	Balata.
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1919—Continued.				
September.....	260	280	550	661
October.....	250	265	438	609
November.....	260	225	430	635
December.....	260	210	400	589
1920:				
January.....	270	230	390	521
February.....	250	220	370	539
March.....	230	220	380	513
April.....	230	220	385	609
May.....	230	200	350	678
June.....	220	175	305	713
July.....	170	160	250	730
August.....	150	140	230	739
September.....	150	140	230	635
October.....	150	140	220	696
November.....	130	140	210	713
December.....	110	90	160	765

The sale of Venezuelan products in foreign countries being paralyzed and Venezuelan commerce being flooded with unwanted goods, it seemed as if it might be necessary to abandon such merchandise in the customs warehouses, return it to the sender, or, in the last resort, to sell it to realize customs duties, because it was logical that with such a condition would come general poverty and great trouble; but it did not turn out thus, the progressive impulse given to the country by the Chief of the National Rehabilitation continued, the national industries flourished and gave employment to thousands of workmen, public works were extended and carried out for the welfare of the country, the Government increased its expenses up to 78,000,000 bolivars (that is to say, 14,000,000 more than the previous year), monetary circulation was quickened, the activity of all branches of commerce was redoubled, merchants and business men united their forces in strong solidarity, and in this way the serious effects of the crisis were resisted.

THE INTERNAL REVENUE.

The rapid fluctuations of the customs duties, which depend more on foreign commerce than on Venezuelan, brought about the decision, starting in 1914, to make the internal revenue the largest and most certain source of income of the Treasury. This end has to a large extent been attained, since from 1915 the increase of the principal sources of the internal revenue has been constant, as will be seen from the following table for the past 10 years:

Years.	Cigarettes.	Stamps.	Liquors.	Salt deposits.
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1911.....	4,275,139	1,440,000	3,251,006	3,137,500
1912.....	4,844,860	1,440,000	3,430,193	4,862,500
1913.....	3,340,000	1,200,000	3,739,686	2,666,667
1914.....	5,672,011	2,003,435	3,577,375	4,784,775
1915.....	6,021,237	3,287,948	5,156,014	3,866,667
1916.....	6,195,957	4,209,244	6,774,846	6,510,592
1917.....	6,399,437	4,392,472	7,413,608	6,774,315
1918.....	6,735,328	4,253,662	7,334,793	6,641,300
1919.....	9,856,434	6,895,322	8,813,406	7,226,314
1920.....	8,486,685	8,374,199	9,542,524	6,143,377

It can be seen that since 1915 and 1916 the position of the internal revenue has completely changed, and that since that time the increase has been constant, reaching the total of 40,396,195 bolivars in the crisis year of 1920—two millions larger than for the year 1919. This is due to the legal régime and to the internal organization of the service of each branch of the revenue. The laws and regulations with respect to stamps, cigarettes, liquors, salt deposits, stamped paper, and inheritance taxes were not made offhand, but as the result of long, patient study and observation of the different peculiarities of each

source of revenue, after having eliminated the "renting," a fatal system which from the time of the Colony up to the present reform consumed in longer or shorter periods the greater part of our revenue returns. As regards the organization of the administrative service for each source of revenue, there was minute and continuous labor, from the placing of the employee in the branch where he could render the best service to the elaboration of the detailed instruction to be followed in the administration of each branch of the revenue service. In this way the internal revenue has increased each day; its total product, which in 1911 was about 14,750,000 bolivars, exceeded 40,250,000 in 1920; the income from its principal branches, which in 1911 was a little less than 12,000,000 bolivars, exceeded 32,000,000 in 1920. There follows the comparative table of all the internal revenue in the two years mentioned:

Items.	1911	1920	Items.	1911	1920
	<i>Bolivars.</i>	<i>Bolivars.</i>		<i>Bolivars.</i>	<i>Bolivars.</i>
Cigarettes.....	4,275,139	8,486,685	Pearl fisheries.....	23,310	433,640
Liquors.....	3,251,606	9,542,524	Match stamps.....	305,000	435,000
Salt deposits.....	3,137,506	6,143,377	Telegraph and cable.....	257,336	1,332,297
Stamps.....	1,440,000	8,374,199	Miscellaneous.....	1,358,381	2,805,826
Stamped paper.....	153,265	401,960			
Inheritance taxes.....	154,345	226,861	Total.....	14,707,718	40,396,194
Mines and waste lands...	351,136	2,213,325			

This increase of more than 25,000,000 bolivars in 10 years shows that in fiscal matters we have progressed more during that time than in the first hundred years of the Republic.

LIQUIDATION OF THE NATIONAL DEBT.

The zeal with which the Ministry of Hacienda has attended the services of the public debt will be an honor to the government of the rehabilitation. It has not only paid regularly the interest on the various titles, but also has canceled bonds of the debt and paid those which in a long succession of years constituted a large and onerous burden to the Republic. During the last 10 years the current debts have decreased to the extent of 61,303,547 bolivars, as is shown in the following comparison between the current bonds of January 1, 1911, and those in circulation on December 31, 1920:

[1 bolivar—\$0.193.]

Items.	Jan. 1, 1911.	Dec. 31, 1920
Internal national debt, consolidated at 3 per cent per annum, plus payment made of other debts and recognized credits.....	<i>Bolivars.</i> 52,897,042	<i>Bolivars.</i> 45,175,170
Subscribed debt.....	12,582,993	2,098,652
Treasury bonds.....	2,074,480	349,102
National debt of 3 per cent per annum by diplomatic agreements.....	10,702,938	8,905,792
Provisional certificates (Spanish).....	1,800	1,000
Diplomatic debt of 3 per cent per annum of Venezuela, issue of 1905.....	114,871,875	75,097,025
Total.....	192,930,898	131,627,351

In this cancellation the following amounts are not included—9,106,470 bolivars appropriated during that period to pay the protocols of Washington; 4,712,000 bolivars to cover the accrument on the railway from Puerto Cabello to Valencia; the sum of 3,000,000 bolivars, with which the French claims were settled; the amounts of 1,925,474 bolivars and 1,542,065 bolivars with which the American Critchfield and Manao claims were paid, and other administrative accruments.

Besides maintaining honestly the nation's credit, the present régime administers the public debt, following strictly the provisions of the law of June 11, 1915, that created this service in accordance with the modern financial principles established to-day in the most advanced nations, by which all matters relating to the pecuniary liabilities of the nation can be solved publicly

and in accordance with universal right. One of the most important provisions of the law of public credit is that which refers to the cancellation of coupons and allowance of interest, expressed as follows by articles 20 and 32:

"Six months after the beginning of the renewal of the National Consolidated Internal Debt at 3 per cent per annum, the holders who present bills for exchange shall not receive interest coupons until after the month following the one in which the exchange takes place." "The interest on the debt is outlawed in five years, reckoned from the date when it becomes payable."

NATIONAL BUDGET FOR 1920-21.

Following is a statement of the Venezuelan budget for the 12 months from July 1, 1920, to June 30, 1921:

RÉSUMÉ OF EXPENDITURES.

Items.	Bolivars.	Dollars.	Items.	Bolivars.	Dollars.
Department of the Interior.	12,166,529	2,348,140	Department of Public Works.	6,246,420	1,205,559
Department of Foreign Relations.	1,927,204	371,950	Department of Public Instruction.	4,328,181	835,339
Department of Hacienda (Treasury).	16,889,808	3,259,733	Rectifications of the budget	57,960,171	11,186,313
Department of War and Navy.	11,101,520	2,142,593		578,429	111,637
Department of Fomento (Development).	5,300,509	1,022,998		58,538,600	11,297,950

¹ Includes amounts to be expended in the service of the public debt, both foreign debt and internal debt.

ESTIMATE OF POSSIBLE REVENUE.

Items.	Bolivars.	Dollars.	Items.	Bolivars.	Dollars.
Import duties collectible.	14,000,000	2,702,000	National telegraph.	530,000	102,290
Import duties by parcel post.	700,000	135,100	French cable.	110,000	21,230
Surtax of 30 per cent.	4,410,000	851,130	Mining revenues.	900,000	173,700
National surtax of 12½ per cent.	1,837,500	354,637	Government lands.	125,000	24,125
Territorial impost of 12½ per cent.	1,837,500	354,637	Pearl fisheries.	240,000	46,320
"Goods in transit" charge.	400,000	77,200	Narcotic coal mines.	430,000	82,990
Storage on goods in transit.	10,000	1,930	Aqueducts.	100,000	19,300
Sanitary tax.	240,000	46,320	Drydock and shipyard of Puerto Cabello.	420,000	81,060
Sanitary contributions.	40,000	7,720	Tax, packing houses.	200,000	38,600
Storage charges.	30,000	5,790	National property rentals.	76,000	14,668
Weighing and yardage.	15,000	2,895	Patents of inventions.	10,000	1,930
Docks.	200,000	38,600	Inheritance tax.	120,000	23,160
Stevedoring.	840,000	162,120	Commissions, parcel post.	40,000	7,720
Lighthouses and buoys.	80,000	15,440	Interest on deferred taxes.	20,000	3,800
Customs fines.	140,000	27,020	Sale of official publications.	3,000	579
Registry of vessels and permits.	20,000	3,860	Post-office box rentals.	10,000	1,930
Consular service.	1,100,000	212,300	Sanitary service.	10,000	1,930
Examination fees.	40,000	7,720	Resident garbage-collection service, Caracas.	200,000	38,600
Tobacco and cigarette tax.	8,600,000	1,659,900	Examination tax.	70,000	13,510
Liquor tax.	7,500,000	1,447,500	Fines, various departments.	100,000	19,300
Salt production.	6,700,000	1,293,100	Agricultural experiment station.	2,000	385
Stamp taxes.	6,500,000	1,254,500	Reimbursements.	25,000	4,825
Stamped paper.	220,000	42,460	Order of the Liberator.	300	53
Stamps for match manufacture.	380,000	73,340	Various.	30,700	5,924
			Total.	59,612,000	11,505,116

AGRICULTURE.

ZONES OF PRODUCTION.

The agricultural zones of Venezuela cover, in round numbers, 300,000 square kilometers (1 square kilometer=0.386 square mile) extending from the margin of the delta of the Orinoco to the east, to the boundary with Colombia on the west, and from the Caribbean Sea on the north to the Apure and Orinoco Rivers to the south. South of these two rivers are great areas of very productive land, which is as yet inaccessible for commercial purposes and sparsely populated.

Climate and soil are matters of elevation and topography in South America. In Venezuela every type and kind exists, from the semi-arid lands of the Segovia Highlands in the region of Barquisimeto to the high elevations of the Venezuelan Andes, where wheat and potatoes are grown, and to the tropical conditions of the lower Orinoco and parts of the Caribbean coast. In the lower basin of Lake Maracaibo sugar cane grows in profusion, while just back of this low tropical country, to the south and east, is found the coffee-producing region of the Andes (Trujillo and Merida) at elevations of 3,000 to 6,000 feet, with wheat and Temperate-Zone products on the higher levels.

The district that has received the most attention in Venezuela and is the most developed agriculturally is the basin of Lake Valencia, in the State of Carabobo, lying to the west of Caracas and inland from Puerto Cabello. This region produces all the raw cotton needed for the domestic mills of the country and sufficient corn and beans to allow quantities to be exported. The high prices obtained for products during and following the war have greatly stimulated agriculture all over the country, especially in this rich region, where modern methods are being introduced and native energy and capital attracted. The prevailing difficulty is the lack of labor, which holds this region back in spite of its proximity to two domestic markets and to the seaport of Puerto Cabello for export, railway transportation being already provided by the Puerto Cabello-Valencia Railway, and a system of fairly good cart roads.

The great forest and plain areas of the eastern portion of the Republic around the commercial center of Ciudad Bolivar are undeveloped agriculturally; and, prior to the war, they even imported foodstuffs for the support of the workers in rubber, balata, chicle, and other forest products. During the war the Venezuelan Government carried on a campaign of agricultural production, with the result that the Ciudad Bolivar region is now self-sustaining in the matter of foodstuffs.

Except the higher levels of the Western Andes of Venezuela in the regions of Trujillo and Merida, and small coffee areas among the hills of the northern Coast Range, the agricultural districts of Venezuela may be classed generally as tropical. Climatic conditions are

somewhat better in the Lake Valencia Basin than in the Maracaibo sugar-cane districts along the southern shores of Lake Maracaibo.

LACK OF POPULATION IN AGRICULTURAL AREAS.

The agricultural areas easily developed in Venezuela are undoubtedly sufficient to supply the needs of a population many times greater than the present. About 20 per cent of the population is engaged in agricultural work. The numbers are about evenly divided between the workers in coffee and cacao plantations and those engaged in producing domestic foodstuffs and cotton. An increase in population is necessary before any great increase in production can be hoped for; but modern methods and machinery, after a period of education and experience, will undoubtedly give Venezuela an excess sufficient to allow exports of corn, beans, lard, etc., to the Canal Zone, Cuba, and other islands of the West Indies, and perhaps to the United States, in the event of favorable prices such as those obtained during the war.

A factor in the prevailing scarcity of labor in the agricultural districts is the gradual congregation of the people in the larger towns and cities, to which they are attracted by better living conditions and diversions not found in the country districts. There is a surplus of cheap labor for the factories of the cities, but a lack of men for the farms and plantations.

Agriculture in Venezuela received a setback in 1914 on account of the lack of ocean tonnage for the exportation of coffee, cacao, and other products. The production of sugar, corn, beans, and cotton has been increased to a very considerable extent since that year.

GOVERNMENTAL EFFORTS FOR IMPROVEMENT OF AGRICULTURE.

Agricultural education has received considerable attention from the Government, the need for the adoption of machinery and better methods being manifest. On November 3, 1917, the National Government authorized the establishment of an agricultural experiment station; a site was selected near Caracas and the services of an American expert from the United States Department of Agriculture obtained. The management of this station is under the Ministry of Fomento (Development), and about \$200,000 annually is being invested in this work by the Government. Since 1917 another experimental station has been established near Maracay, where conditions are similar to those in the Valencia agricultural district.

A study has been made of the indigenous products of the country, and considerable work has been done on a survey of the many forest products. Among notable discoveries is that of a rubber-producing plant heretofore unexploited in Venezuela. The main purpose of these stations is to determine the agricultural methods and products best adapted to the country. The work also includes experiments in forestry and conservation of natural resources. Among the activities are the analysis of soils, distribution of seeds, publication of educational pamphlets, etc. The station near Maracay also maintains a department for veterinary research and study of animal diseases peculiar to the country.

USE OF AGRICULTURAL MACHINERY.

In the Valley of Caracas modern methods are employed in intensive cultivation. American plows, harrows, disks, etc., are in daily use, but the available area is limited to the narrow valley, hardly large enough to supply the needs of the capital of 90,000 people. Work animals are oxen and the native "Spanish" mule, vigorous but small and too light for plow work in heavy soils.

INTRODUCTION OF TRACTORS.

The Valencia district possesses large areas of level land and many well-developed "haciendas" (large farms) devoted to the cultivation of cotton, corn, and beans. Light plows have been used for years, but it is only since the outbreak of the war that modern machinery has had the attention consistent with the demands for production. Encouraged by high prices, the owners of rich tracts of land have purchased equipment liberally and are experimenting with machinery heretofore unknown to the district and country. Nearly all the American gasoline tractors are represented by agents in Caracas and Valencia, and forty-odd American tractors were sold in Caracas during the first half of 1920. The success of the American automobile in Venezuela and the increasing use of the motor truck have inspired general confidence in the light American farm tractor also.

The main difficulty relative to the introduction and use of machinery in Venezuela is found in the people's ignorance of machinery, necessitating a slow process of education on the land itself; but landowners engaged in developing their properties are forced to import machinery and all sorts of labor-saving equipment on account of the prevailing scarcity of labor on the land.

This movement is seen in the recent sales of American tractors. Up to the spring of 1919 no tractors were in use except a few caterpillar-type machines, which were employed for transport work by the oil companies in the Maracaibo district. Two or three farm tractors had previously been imported for agricultural work, but the machines were never actually used, probably because there was no agent to give service in the way of demonstration and repairs, etc. In March, 1919, the first American tractors were imported, and to date (August, 1920) 50 machines of this type are in use in Venezuela as follows: Federal District, Miranda, Aragua, Carabobo, Yaracuy, and Lara, 43; San Fernando de Apure, 1; Barcelona, 1; Maracaibo Lake District, 5. The only other American tractor in use for farming is one caterpillar-type machine in Cagua; two more of these machines have been ordered and are in transit. A representative of another tractor is now in Caracas with a machine giving practical field demonstrations near the city.

Foreign tractors are represented by the Fiat of Italy, the agent stating that several machines have been shipped to Venezuela and that one has been sold.

Most of these tractors are being used in sugar-cane cultivation, with both disk and mold-board plows. They also haul a 28-inch disk harrow.

Gasoline costs 70 to 80 cents per gallon in the Caracas and Valencia districts, coming from the domestic refinery of the Caribbean Petro-

leum Co., located at San Lorenzo on Lake Maracaibo; and tractors can not compete with cheap native labor when gas costs over 30 cents per gallon. The reasons given for the high price of gasoline are the lack of transportation facilities suitable for petroleum products and the small capacity of the refinery.

DUTY ON AGRICULTURAL EQUIPMENT.

The duty on tractors and some classes of agricultural machinery and implements is 0.05 bolivar (\$0.00965) per kilo of gross weight. The import duty on a small tractor comes to about \$12.

Agricultural implements, machinery, and materials coming under the free list of the Venezuelan tariff are as follows:

All chemicals, etc., used for disinfection, extermination of insects or harmful animals such as rats, rodents, etc., and machinery or apparatus for their application.

Barbed wire for fencing; mesh wire for fencing, the mesh measuring not less than 3 centimeters square, and other fencing wires; staples of a length not exceeding 2½ centimeters and of 3 millimeters caliber.

Rice classifiers and polishers, etc.

Serums, etc., for inoculation of live stock.

Machetes, with horn handles, for agricultural use.

Windmills and well-drilling machinery.

Live plants, seeds, and bulbs for agriculture.

Bridges and their accessories when used for agricultural transport.

All repair and replacement parts for agricultural machinery.

Animal, vegetable, and chemical fertilizers of all kinds used for agricultural purposes.

Cotton seed.

The following machinery and utensils for agriculture: Stump pullers, plows and gang-plows, cultivators, classifiers, washers, decorticating machines, polishers, rakes, harrows, driers, separators and thrashers, hoes, picks, shovels, machetes with or without wooden handles, axes, pruning tools of all kinds, seeding machinery, coconut cleaners, defiberators, corn shellers, etc.; cotton gins and cleaners, fertilizer distributors, manure forks, automatic pulverizers, baling presses, oilseed presses, cacao driers and other cacao machinery, harvesters, etc.

STATISTICS OF IMPORTS.

The imports into Venezuela of agricultural implements and barbed wire during 1917, 1918, and 1919 were as follows:

Articles and countries.	1917	1918	1919
Agricultural implements.....	\$41,058	\$132,437	\$279,478
United States.....	32,612	73,800	148,322
United Kingdom.....	6,130	58,124	116,631
Spain.....	2,316	.....	3,489
Wire, barbed.....	65,010	31,855	247,637
United States.....	63,523	25,623	243,509

With the stimulus to agriculture given by the prosperous conditions obtaining during the war and the year following the armistice, buying of agricultural implements and machinery has been increased.

The imports of agricultural implements and machinery shown above for 1919 were divided as follows (values in Venezuelan currency):

[1 bolivar = \$0.193.]

Customhouses and countries of origin.	Bolivars.	Customhouses and countries of origin.	Bolivars.	Customhouses and countries of origin.	Bolivars.
La Guaira:		Puerto Cabello—Con.		Puerto Sucre:	
France.....	280	United States.....	144,344	Trinidad.....	9,090
Spain.....	9,284	Total.....	378,615	United States.....	1,144
United Kingdom.....	244,558			Total.....	10,234
United States.....	413,277	Ciudad Bolivar:		La Vela:	
Total.....	667,499	Netherlands.....	1,300	United Kingdom.....	10,032
Maracaibo:		Trinidad.....	17,059		
Netherlands.....	2,115	United Kingdom.....	43,557	Cristobal Colon:	
Spain.....	8,455	United States.....	89,988	Trinidad.....	15,134
United Kingdom.....	54,332	Total.....	151,902	United States.....	135
United States.....	108,096			Total.....	15,269
Total.....	172,938	Carupano:		Pampatar:	
Puerto Cabello:		Netherlands.....	6,565	Trinidad.....	3,006
Italy.....	101	Trinidad.....	1,031		
Spain.....	340	United Kingdom.....	17,896	Grand total.....	1,445,070
United Kingdom.....	233,830	United States.....	11,683		
		Total.....	37,975		

PROMISING FIELD FOR AMERICAN SALES.

The agricultural region of the States of Carabobo, Aragua, Miranda, Yaracuy, and Lara, and the Federal District is easily accessible from either Puerto Cabello or Caracas and forms one immense territory capable of large development, which is hindered only by lack of sufficient labor. Most of the farms are large estates, the owners of which are much interested in new implements, machinery, and methods. Heretofore the means of introduction of machinery has been practically limited to catalogues and advertisements in the magazines dedicated to Latin-American trade, although native houses are securing new agencies recently, and one American agency is very active. American manufacturers of agricultural equipment should send to Venezuela men experienced in tropical agriculture, with sample equipment to demonstrate the utility and value of the equipment on the ground, the demonstrator staying in a given district during the first crop season and directing the work. Stocks of repair and replacement parts are necessary. Local agents left in charge should be encouraged to train men for the service division of their sales department for agricultural equipment. Without this demonstration work no great increase in sales of American equipment in Venezuela can be expected. The demand and necessity for such equipment in Venezuela, given the conditions already explained, make the expense of such work well worth while. Only practical men should be sent to the field for demonstration work, preferably men experienced in the Tropics.

For repair work men can be recruited from the ranks of the many Venezuelans who go to the United States every year to work in the factories and industrial plants and return to Venezuela after a year or so to work in garages, railway shops, cotton factories, etc. The point is that the landowners, while possessing the means with which to pay for new equipment, know very little about its practical utility and have to be shown; also, the selling force will have to organize service facilities and take care of the business all the way through.

PRINCIPAL AGRICULTURAL PRODUCTS.

The principal agricultural products of Venezuela are coffee, cacao, sugar, tobacco, cotton, corn, beans and peas, and wheat. All kinds of vegetables are grown for local consumption, and also both Torrid and Temperate Zone fruits. Apples and peaches are found in the hills near Caracas and in the Western Andean region around Trujillo and Merida.

Of the exportable fruits, the banana is the most important, though only about \$100,000 is invested in the banana industry commercially, possibly because the general scarcity of labor would make it necessary to recruit from the West Indies. Venezuela possesses large areas adjacent to seaports that are suitable for banana cultivation, but are not yet used for this purpose.

The other products produced in sufficient quantity to allow of exportation are coffee, cacao, corn, beans, and sugar.

As has been said, production in Venezuela can not be increased without an increase in the population or the general adoption of better methods of cultivation and modern labor-saving devices. Good educational work is being done in Venezuela by the magazine *La Hacienda*, published in Caracas. Unfortunately, the illiteracy of the mass of the population precludes any general national benefit from this source.

Sufficient cotton and tobacco are grown to support the domestic factories, and increased production of these two staples will be sufficient to take care of an expanded home demand. Lack of labor precludes an excess of production above domestic needs. During the war, when high prices attracted speculation in exportable products, corn, beans, sugar, and tobacco were exported, but the resulting domestic shortage showed itself in inflated prices for these staples. At one time in 1919, before the new crop came in, tobacco from Cuba and Jamaica was cheaper in Venezuela than the domestic product.

Venezuela possesses great areas suitable for agriculture that are easily accessible from the coast and connected with seaports by railways; and, while conditions are those generally obtaining in the Tropics, the fertility of the soil, the abundance of rainfall, and proximity to foreign markets offset the disadvantages to a great extent. Certain areas of Venezuela could be made as productive as the best regions of Cuba and Porto Rico if the necessary elements of labor, capital, and organization were provided, to develop sugar, tobacco, rice, and cotton on a large scale. This is being done on the sugar lands of the south shore of Lake Maracaibo, where labor is recruited from the Indians of the Goajira Peninsula and the Maracaibo region. Results and profits have been so good here that a considerable increase in native investment in sugar estates can be looked for in the near future if prices are maintained at a high level. Other sugar estates also are being enlarged and developed, owing to the high price of sugar. The encouraging factor is the increasing purchase of tractors and other modern machinery.

Cuba, Martinique, Trinidad, Curaçao, and other islands of the West Indies furnish a ready and close market for all present surplus products, and with increased production the Panama Canal Zone could be included for foodstuffs, transportation facilities being ample.

At present considerable trade is carried on in small schooners of 60 to 120 tons' burden; but the trade is unorganized and dependent upon local market conditions, which vary as the crop seasons of each island are good or bad.

Curaçao has a large population supported by industry, such as hat making and trading. The island is practically barren and does not produce food in sufficient quantities for the people. Merchandise is exchanged for foodstuffs from the mainland of Venezuela. The same is true of the Venezuelan islands of Margarita, Coche, and Cubagua, which exchange pearls and dried fish for merchandise. Cuba and Martinique and also Guadeloupe take Venezuelan cattle, hogs, corn, beans, and cacao.

The natives of Curaçao are good boat builders and their small schooners, noted for their fine appearance and sailing qualities, are found in every port, large and small, of the West Indies and the Caribbean mainland. The Venezuelan trade with Curaçao is the best organized and constitutes the greatest asset of the Dutch island. (For further details of this trade, see report on Curaçao.)

COFFEE.

IMPORTANCE AND GENERAL CHARACTER OF INDUSTRY.

The cultivation of coffee began near the present site of Caracas in 1784 when the first seeds were brought from Martinique. To-day the number of coffee trees in Venezuela is estimated at 260,000,000.

Recent statistics place Venezuela in the third rank among coffee-growing countries, next to Colombia. In 1919 Colombia produced 1,360,000 sacks for export and Venezuela 1,000,000 sacks. The Venezuelan exports came from the following districts: Maracaibo district, 500,000 sacks (including amounts received from Cucuta, Colombia); Puerto Cabello district, 300,000 sacks; Caracas district, 200,000 sacks (shipped from La Guaira).

There are 25,000 coffee plantations in Venezuela, covering an area of 200,000 hectares (1 hectare=2.47 acres) and valued at 80,000,000 bolivars (\$16,000,000). Unlike Colombia, where coffee plantations are usually small, containing not over 40,000 trees, Venezuela has many large plantations in the hands of wealthy owners. One coffee estate, for example, contains 20,000 hectares. The picked berry is brought down from the hills by aerial trams, and the driers handle 150 sacks every 12 hours. This is one of the largest coffee estates in Venezuela and is located just east of Puerto Cabello in the Coast Range. Export shipment is made from the small port of La Cruz to La Guaira. This plantation has been developed by a system whereby the natives clear and plant small areas for the owner of the land under contract to deliver the crop on a share basis or to sell the planted area, with the crop on it, directly to the plantation at an agreed price.

Coffee is grown in many parts of the country. It does well at elevations of 500 to 2,000 meters, and even higher, in Venezuela. The better grades come from the elevations of 6,000 feet or over, but they are of slower growth and lower productivity. The entire Coast Range and the Western Andean region are suitable for

coffee wherever there is a sufficient layer of top soil and moisture. The three principal regions of production are Maracaibo, which exports the coffee produced in the districts of San Cristobal, Trujillo, and Merida; Puerto Cabello, which exports the coffee grown in the Coast Range to the east and west and farther inland; and Caracas (La Guaira); which exports the coffee grown in the central region of the Coast Range inland from La Guaira.

Coffee trees bear fully within four years after planting from the seed and live for an average of 50 years. The average production per tree is estimated at one-eighth of a kilo for each crop. Two pickings take place each year, but the first one, in October and November, is very light, the large harvest being in December, January, and part of February. However, the season for picking the coffee varies with the elevation and local climatic conditions, trees at elevations of over 3,000 feet bearing at least one month later than those on lower areas.

The small plantation owners sell their coffee "in pergamino"—that is, with the inner sac remaining around the double bean—to the dealers and large plantation owners, who have machinery for shelling and cleaning the bean in this condition. Most large plantations have well-equipped plants consisting of pulpers, shellers, and driers for handling coffee direct from the pickers.

The importance of coffee in Venezuela can not be overestimated. In the rough mountainous regions of the country it grows on the steep slopes where nothing else of value could be produced. Its planting and cultivation demand little labor or skill, there being no plowing or other cultivation other than chopping out the larger weeds with machetes once or twice a year. The larger trees found on the ground are left as shade for the coffee plants, and in the region of Caracas and Valencia bananas are planted to serve the double purpose of shading the tender young coffee plants and furnishing an additional income to the planter. Women and children, as well as men, are used for picking in the harvest season.

In 1919 coffee and cacao constituted nearly three-fourths of the exports of Venezuela, and upon the successful marketing of the coffee and cacao crops depend the prosperity of the country. The principal market is the United States, but during the war this outlet was practically closed and the Spanish and Italian markets soon became overstocked. Low prices and lack of ocean tonnage curtailed production, and the 1918 harvest came on with large stocks left over and in storage from 1917. The chief sufferers were the owners of coffee estates, who depend upon advances from commission houses on the crops. The commission houses were unable to finance the coffee in storage without assistance from the banks.

PRICES AND GRADES.

In November, 1918, following the armistice, coffee began to advance in price in New York owing to the demand for reexport to Europe, which had been without new supplies of coffee during the war. Venezuelan grades advanced rapidly from an average of 11 cents per pound in New York to as high as 26 and even 28 cents per pound by May, 1919. Venezuelan coffee growers and dealers reaped a rich harvest at these prices. Old established German firms, doing a general commission and mercantile business and acting as private

bankers with the policy of helping the planter of the interior directly and handling his products of export, had been forced to receive large amounts of coffee from their clients at low prices and during the war were unable to move the coffee thus received. In Maracaibo and Cucuta the congestion became so great that rooms in private houses had to be rented for storage purposes. The removal of the enemy trading restrictions came on the rising market, and, instead of a loss, the coffee thus collected by the larger German firms of Venezuela represented an enormous profit. A factor in the high prices of 1919 was the partial destruction of the Brazilian crops by frosts in the preceding year.

Prices and grades of Venezuelan coffee are lower than those of Colombia but much better than those of Brazil. When Colombian grades are selling for an average price of 28 cents per pound in New York, Venezuelan grades are worth around 26 and 27 cents per pound and the heavier Brazilian grades (Santos and Bahia) around 10 and 11 cents. Venezuelan grades are classed with the Colombian and Central American "suaves," or mild grades, and are most used by coffee roasters for blending with the heavier Brazilian coffees.

The Venezuelan coffees are known as Maracaibo, Caracas, and Puerto Cabello, although there is little distinction in grade, quality depending not upon the region but upon the elevation and the care used in cultivation and classification for market.

The following prices were quoted in New York in August, 1920, for the different grades of Venezuelan coffee:

Maracaibo : ¹	Cents.
Cucuta Excellent.....	13½
Cucuta Good.....	12½
Trujillo.....	10½
Cucuta, Shelled.....	15½
Bocono.....	12½
Merida.....	13½
La Guaira : ²	
Caracas.....	10½-11
Caracas Superior.....	14-16
Puerto Cabello : ²	
Puerto Cabello.....	10½-11
Puerto Cabello Superior.....	13-15

STATISTICS OF EXPORTS.

The following table shows the quantity and value of coffee exported from the principal ports of Venezuela during 1920, with the chief countries of destination:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Countries.	Kilos.	Bolivars.	Countries.	Kilos.	Bolivars.
La Guaira.....	12,949,312	25,505,910	Maracaibo.....	39,021,189	63,933,333
Canary Islands.....	192,547	337,225	Curacao.....	2,660,065	5,016,508
Curacao.....	175,405	185,599	France.....	912,756	1,591,942
France.....	5,112,865	9,633,097	Netherlands.....	123,467	339,800
Italy.....	76,080	121,728	Spain.....	23,685	61,607
Martinique.....	435,979	674,926	United Kingdom.....	40,367	110,114
Netherlands.....	470,734	1,133,784	United States.....	35,250,629	56,803,422
Spain.....	2,338,147	4,433,751	Puerto Cabello.....	27,218,339	57,720,417
United Kingdom.....	740,534	1,598,331	Belgium.....	12,200	24,400
United States.....	3,406,571	7,386,019	Canary Islands.....	47,768	99,046

¹ Immediate shipment.

² From stocks.

Countries.	Kilos.	Bolivars.	Countries.	Kilos.	Bolivars.
Puerto Cabello—Contd.			Ciudad Bolívar—Contd.		
Cuba.....	52,931	87,688	Trinidad.....	15,466	22,322
Curacao.....	1,146,321	1,867,224	United States.....	56,175	121,641
France.....	11,379,133	24,196,495	Puerto Sucre.....	1,031,482	2,148,301
Italy.....	81,300	148,500	Curacao.....	13,200	33,000
Netherlands.....	2,374,050	6,860,125	France.....	959,150	1,970,897
Spain.....	4,430,416	9,364,400	Netherlands.....	19,860	51,636
United Kingdom.....	961,681	1,804,614	United States.....	30,000	75,000
United States.....	6,728,024	13,318,047	Other ports.....	87,607	136,111
Carupano.....	1,116,919	1,670,094	Curacao.....	20,503	32,446
France.....	1,066,883	1,575,627	Trinidad.....	59,461	101,088
Netherlands.....	35,949	67,313			
United States.....	11,087	23,854	Total.....	81,552,190	151,428,568
Ciudad Bolívar.....	127,342	309,402			
Curacao.....	54,041	162,123			

The United States received 45,482,786 kilos of Venezuelan coffee in 1920, valued at 77,727,983 bolivars (\$15,001,501), or nearly 56 per cent of the total quantity exported and 51 per cent of the total value. The total exports in 1920 amounted to 1,359,203 sacks of 60 kilos and were valued at \$29,225,714 at the par rate of exchange.

Practically all the coffee exported in 1920 was of the 1919 crop, since the coffee crop starts to move in December and the first heavy shipments take place in January. Prices obtained for the 1919 crop averaged well above 20 cents per pound in New York and resulted in the greatest influx of wealth ever experienced in Venezuela, stimulating business and industry and bringing on an era of unparalleled prosperity. The first of the 1920 crop was moved at fairly high prices but on a declining market.

EFFECT OF COFFEE MARKET ON GENERAL ECONOMIC CONDITIONS.

Upon the volume and market prices of coffee and cacao, the two great export staples of Venezuela, depends the economic condition of the country for the year. If the coming crops are reported to be good the buying of foreign merchandise is brisk in anticipation of a heavy demand immediately following the harvest in the interior; if crops are light or foreign market prices low, commerce in general is affected, buying of goods is slow, and the entire country suffers. Venezuela possesses other resources sufficient for domestic consumption, but depends upon the exports of coffee and cacao for its foreign trade balance year by year. The American exporter interested in extending trade relations with Venezuela will do well to keep in touch with and study coffee and cacao crop and market conditions and govern his efforts in this market accordingly.

The situation in the middle of 1920 illustrates the important bearing of the coffee market on general conditions. Coffee prices gradually fell back almost to pre-war normal levels by the end of August, i. e., to about half of the prices obtaining during 1919. Importers were heavily stocked in anticipation of another year of high prices. Buying from the interior became very light and large stocks in many cases were sacrificed to obtain cash with which to meet bills for goods purchased during the high prices of the spring months. Holders of coffee stocks did not sell on the local markets because they hoped for a market reaction which could not reasonably be looked for in 1920 given light buying from Europe and heavy ship-

ments from Brazil. The situation was greatly aggravated by the high rate of exchange for the dollar, a 13 per cent premium being registered in the first week of September, and by the general restriction of credits in anticipation of a dull season in general business and commerce. Another factor was the restriction of commercial credits in the United States and the refusal of the New York export commission houses to accept coffee, cacao, and hides from Venezuela on consignment, with advances, as was formerly customary.

Local coffee prices are governed by New York quotations (less commissions), land and ocean freights, cleaning and washing charges, and the price of money.

Prices in the Caracas market at the end of August, 1920, were as follows: Small sales of first grade (cleaned) at 72 bolivars (\$13.90) per 100 pounds (46 kilos). Offers of 75 bolivars (\$14.47) per 100 pounds were not being accepted by holders of stocks or for future deliveries. "Trillados" were quoted at 64 (\$12.35) and "Pasilla" at 56 bolivars (\$10.81), according to class and grade. Few sales were made, the tendency being to hold for an increase in price in spite of reports of heavy Brazil shipments and slow demand in New York for the "suave" (mild) grades of Colombian and Venezuelan coffees.

By November 30, 1920, prices on the New York market for various grades had fallen to the following quotations:

Maracaibo:	Cents per pound.
Trujillo.....	9½-10
Bocono.....	10½-10¾
Tovar.....	10½-10¾
Merida—	
Trillado.....	11½-11¾
Descerezado.....	11½-13½
Cucuta—	
Descerezado.....	11½-13½
Choice grade.....	13½-14½
Caracas:	
Trillado.....	9½-10
Descerezado.....	11½-13
Puerto Cabello:	
Trillado.....	9½-10
Descerezado.....	10-12

About 5,000 sacks of Maracaibo coffees were received and sold in New York during October, but the leftover stocks of Caracas and Puerto Cabello grades were reported small and of poor quality, with the market demand very light. Commission houses were finding it increasingly impossible to place coffee on "futures" (future delivery), and a still further decline was predicted on account of the expected heavy arrivals from Brazil and the doubt that the United States would be able to absorb all the coffee offered. The active coffee market in New York at the end of 1919 and during the first half of 1920 was due to the demand from Europe, which had been without new stocks of coffee since the beginning of the war, and to the partial failure of the Brazilian crop in 1918, due to frost. The demand from Europe on the New York market was limited in the latter part of 1920 by Europe's inability to pay.

In November, with the picking season rapidly approaching, coffee planters were offering their output in Caracas at 60 bolivars (\$11.58)

per quintal (101.4 pounds), but local prices had already declined below that figure, affected by the further tendency to decline in New York and also by the credit stringency prevailing throughout the country. Money was then worth at least 10 per cent at the banks and much more from private sources, and a great deal of the liquid capital of the country was already tied up in crop advances, foreign exchange, and merchandise purchased at the high prices of the spring of 1920. There was not enough money in the country to finance the 40 per cent of the previous year's crop that was still on hand (held by speculators, who had purchased it at high prices, averaging around 120 bolivars, or \$23.16, per quintal, during the coffee boom of 1919) and also the coming new crop—not to mention the demands on capital from all the other industries of the country.

Late in December it became apparent, contrary to predictions, that the United States would be able to absorb most of Brazil's crop, and the coffee market reacted slightly (a fraction of a cent per pound) but enough to encourage the growers and to keep the speculators firm in their decision to hold their 1919 stocks as long as they could carry them on borrowed money. During this period representatives of American coffee buyers in the country began to renew their offers at the lower prices; but the general decision of the growers and owners of old stocks was to hold their coffee whenever possible, in expectation of better prices in 1921.

COST OF PRODUCTION.

Prior to the war coffee growers estimated the cost of production of one quintal (101.4 pounds) of cleaned and washed coffee ready for export and "ex warehouse" Caracas at 28 bolivars (\$5.40). In 1919 this figure had increased to 42 bolivars (\$8.11), owing to the increased charges for labor, cartage, etc., and the rains that made the season very late.

It cost about 2 bolivars (\$0.39) in 1919 to lay down one quintal (10.14 pounds) of coffee from warehouse in Caracas to warehouse in La Guaira for ocean loading. To this figure must be added the loading charges of the La Guaira Harbor Corporation of 27.50 bolivars (\$5.21) per metric ton, and the ocean freight, plus handling charges, warehousing, and commissions in New York or European ports.

The cost of living was beginning to decrease in Venezuela in December, and wages thus became more adequate for the people. With the gradual return to normal after the period of speculation induced by the high prices for products of export during 1919, production costs will be lower, even without any material decrease in wages, already low enough. With present prices in New York at about the pre-war level, and even given the 1919 figure of cost of production, the Venezuelan coffee planter can take care of his existing plantations, increase them, harvest his crops, and make a reasonable profit; but there is no wide margin left for the speculator.

NEW AREAS OF COFFEE TREES SET OUT.

Considerable new areas were set out to coffee trees in 1919 and 1920, this development of the industry being brought about by the

prosperity of those years and the high prices for the product; but these trees will not reach full bearing for three to five years from date. In the meantime, market or climatic conditions may still further affect the total.

MOVEMENT FOR BETTER DISTRIBUTION OF CROP.

In January, 1921, warehouses of Willemstad, Curaçao, were already beginning to be filled with Venezuelan coffee, brought over from Maracaibo by the many small schooners plying in that trade; this coffee was to be held in Curaçao until better market conditions prevailed.

The Venezuelan Government is alive to the effect on coffee prices of the congestion of the New York market during the shipping seasons; and through its commercial agents' offices recently established in New York and the principal capitals and commercial centers of Europe it is endeavoring to bring about a better distribution of the coffee crop. The New Orleans market was to be investigated with this end in view and as one of the prospective markets much nearer to Venezuela than any other coffee port.

EFFECT OF EXCHANGE SITUATION.

A high premium for the dollar in Venezuela benefits the coffee exporter, as he is paid for his product in dollars, which he can sell at a higher rate in Venezuelan money and so get more for his product. One of the hoped-for means of relief from the high premium commanded by the dollar late in 1920 was the effect on exchange that the offering of the drafts in payment of the 1920-21 coffee crop would have in Venezuela. However, low prices, subnormal crop, and the tendency to hold the product for better prices later on in 1921 militated against the full effect of any such benefit to the exchange situation, at least during the first half of 1921.

CACAO.

The natural cacao (called *Theobroma edendo*, meaning "edible food of the gods") is a seed from a tree indigenous to the soil of Venezuela, which possesses one of the best cacao zones in the world. Cacao is second in importance among the exports of Venezuela, shipments of this product averaging 300,000 bags annually, as follows: La Guaira, 175,000 bags; Puerto Cabello, 50,000 bags; Carupano, 75,000 bags.

The cacao tree requires, for full development and profitable crops, a temperature of 80° F. (27° C.), a moist climate, well-drained land, and shade. When the land is cleared for cacao planting the larger trees are left for the purpose of affording shade to the tender cacao plants. The cacao plant is much more delicate than the coffee shrub, being subject to plant disease, principally occasioned by the gray moth.

The regions of cacao production in Venezuela are distributed throughout the Coast Range from west of Puerto Cabello to Carenero and inland as far as the hills of the llanos south of Caracas, occurring

again in the Coast Range east of Barcelona and around Carupano. The average elevation is 3,000 feet above sea level. Cacao is also found in considerable areas in the lower levels of the Western Andes in the Trujillo, Merida, and Lake Maracaibo districts. The Caracas district has the heaviest production, shipping three times as much cacao as any other district in the country; plantations are given more attention in the way of protection and cultivation, and the care of the cacao itself, after picking, is scientifically carried out.

About 200 cacao trees are planted to each hectare (2.47 acres). They require from five to seven years (according to elevation and local conditions) to reach full bearing, when two crops a year are produced, ripening in June and December; the pods containing the cacao bean depend directly from the bark of the tree on the trunk and branches. Generally, all trees produce small quantities throughout the year, but the two main harvests are as stated. The average life of the cacao tree is about 40 years, during which time the two crops yield about 550 to 675 kilos (1 kilo=2.2046 pounds) per hectare (2.47 acres) as a high average yield under the best conditions. The cacao bean is held in an elongated pod ribbed like a muskmelon, yellow and red in color, but turning purple when it is ripe. Each pod contains 16 seeds. After picking, the pods ferment and burst open with the heat in a few days, when the seeds are shelled, washed, and packed for shipment. Unlike the coffee bean, cacao can not be stored in a moist climate for any length of time on account of fermentation. Cacao drying sheds are built with movable roofs, which can be quickly placed over the drying beans in case of rain or damp nights.

Two grades of cacao are grown in Venezuela—the “criollo,” which is the native cacao, and the “trinitario,” which was originally imported from the island of Trinidad. The “criollo” grows best in the small valleys near the sea, where the temperature is warm and moist. This kind is of very high grade. The “Chua plantation” produces a still finer grade which, on account of its sweetness and high oil content, commands an exceptionally high price, principally in France. The total investment in cacao in Venezuela is estimated at 62,000,000 bolivars (\$12,400,000). Roughly, the average annual exports of cacao from Venezuela total 10,000 tons, valued at \$2,000,000. The lack of sufficient labor and the influx of the rural populations to the cities preclude an increase in production on any considerable scale for some time to come.

Puerto Cabello shipped in 1917 a total of 6,285,558 pounds, valued at \$853,758. France was the principal buyer of Venezuelan cacao prior to 1914. Puerto Cabello cacao exports fell off in 1918, amounting to only 4,470,000 pounds, valued at \$441,160, of which the United States received 3,745,258 pounds, valued at \$367,649.

To show the relative value, by countries of destination, of Venezuela's exports of cacao, the latest available statistics, covering the year 1919, are given in the following table:

[Kilo—2.2046 pounds; bolivar—\$0.193.]

Ports of shipment and countries of destination.	Kilos.	Bolivars.	Ports of shipment and countries of destination.	Kilos.	Bolivars.
FROM LA GUAIRA.			FROM CIUDAD BOLIVAR.		
Canary Islands.....	33,700	47,180	Trinidad.....	61,204	122,408
Colombia.....	24,400	34,160	FROM BARRANCAS (ORINOCO DELTA).		
Curacao.....	131,760	187,264	Trinidad.....	238,612	548,279
France.....	2,339,172	4,514,108	FROM CARUPANO (EASTERN COAST RANGE).		
Italy.....	115,525	221,543	France.....	2,000,163	3,416,421
Martinique.....	95,389	163,418	Italy.....	12,000	21,600
Netherlands.....	929,399	2,440,935	Martinique.....	3,000	4,500
Porto Rico.....	2,404	3,360	Netherlands.....	314,861	713,298
Spain.....	1,123,418	1,464,220	Trinidad.....	256,384	416,967
Trinidad.....	322,000	450,800	United Kingdom.....	69,900	139,030
United Kingdom.....	1,933,967	4,459,112	United States.....	454,466	977,036
United States.....	3,071,346	6,371,471	Total.....	3,110,774	5,688,852
Total.....	10,122,470	20,557,569	FROM RIO CARIBE.		
FROM MARACAIBO.			France.....	120,460	216,828
Curacao.....	21,604	54,377	Trinidad.....	215,386	360,218
Netherlands.....	12,866	23,948	Total.....	335,846	577,046
Spain.....	6,000	13,500	FROM PUERTO SUCRE.		
United Kingdom.....	3,131	9,071	United States.....	2,050	1,537
United States.....	383,927	861,882	FROM CRISTOBAL COLON (EASTERN COAST RANGE).		
Total.....	427,528	967,778	Trinidad.....	2,654,861	3,845,938
FROM PUERTO CABELLO.			Grand total.....	19,838,945	39,086,568
Aruba.....	96	130			
Bonaire.....	45	80			
Curacao.....	96,337	143,903			
France.....	42,100	117,880			
Netherlands.....	157,085	408,837			
Spain.....	576,485	1,208,287			
United Kingdom.....	765,436	2,004,020			
United States.....	1,248,006	2,894,024			
Total.....	2,885,600	6,777,161			

Of the cacao exports in 1919, according to the above Venezuelan figures, the United States received 5,159,795 kilos, valued at 11,305,950 bolivars (\$2,182,048), France took a total of 4,501,895 kilos, valued at 8,265,235 bolivars (\$1,595,190), the next largest buyers of this Venezuelan product being the United Kingdom and Spain, in the order named.

According to official United States statistics, this country purchased from Venezuela in 1920 cacao to the amount of 16,381,647 pounds, valued at \$3,478,286.

As compared with coffee, cacao requires more care in planting, cultivation, and handling of the crop after picking, the product being much more delicate and subject to fermentation, mold, and other damage from dampness and heat. More labor and a heavier initial expenditure are required than in the case of coffee. For these reasons coffee receives more attention from growers in Venezuela, where climate and soil in easily accessible places are ideal for its cultivation. Exports of both cacao and coffee could be greatly increased if more capital were to be invested and labor secured from outside sources. The cultivation of cacao has the advantage of requiring less machinery for the preparation of the bean for export.

The Venezuelan tariff allows the free entry into the country of drying machinery for cacao, the evident intent of the schedule being

free entry of all cacao-working machinery. Imports of cacao machinery into Venezuela have averaged about \$200,000 per annum in the past.

TOBACCO.

Tobacco was introduced into Venezuela by the Spaniards from the West Indies in early colonial times, being most successfully cultivated in the Provinces of Capadare, Yaritagua, Merida, Cumanacoa, Guanape, Guaribe, and Barinas. Very good tobacco is also grown near Cumana, that from Guaracho being considered exceptionally good. In modern times tobacco is also grown in commercial quantities in the Federal District and Quebrada Seca, in the State of Aragua, and near Valencia, in the region of Guacara.

The tobacco plant thrives best in the humid and deep soils of the small valleys. It requires six months for maturity, as a rule, and needs great care.

Prior to the war some tobacco had been exported from Venezuela, chiefly to Cuba, where it was mixed with Cuban tobacco and used for the manufacture of Cuban cigarettes.

The principal classes and grades of Venezuelan tobacco are distinguished according to the districts in which they are produced, as follows: Maturin, Capadare, Salon, Golfero, Guaribe, Cocorote, Cumana, Quebrada Seca, and Guaracho. Other grades of lesser importance are grown near Urachiche, Guanape, Örituco, Paya, and Tovar. Similar grades are produced in widely separated parts of the country, as climate and soil conditions are matters of elevation rather than latitude in Venezuela.

GRADES OF VENEZUELAN TOBACCO.

"Maturin" is produced in the State of Monagas, in the region of the town of Maturin. It was in this region and that of Barinas, in the State of Zamora, that tobacco was first grown in Venezuela by the Spaniards. Maturin is the heaviest producer of tobacco, and this grade is the best known in foreign markets. Since early times the cultivation of tobacco has steadily decreased in the Barinas district, while it has increased in that of Maturin, from which latter source the principal supply of tobacco for domestic manufacture has been drawn. Maturin tobacco is classed as "Principal" or "Covering," "Half-tree," and "Sprouts." Each package for export weighs 25 to 35 kilos (1 kilo=2.2046 pounds) and is wrapped in banana leaves tied with agave cord. It is distinguished by the fact that the leaves are light in weight in comparison with their bulk, and that the tobacco is of medium strength, of good aroma, and keeps in good condition for a period of two years before losing its strength.

"Capadare" is of better quality than "Maturin," maintaining its strength for three years or more after packing. The kind known locally as "Mirimire" (from the Capadare region) is of still better aroma and quality. Its weight in proportion to its bulk is greater than that of "Maturin," and it does not burn as fast as the latter. "Capadare" is packed in jute bags of 46 kilos each and is graded as No. 1 and No. 2.

"Salon" has a very fine aroma and very fine, light leaves of lighter color than other Venezuelan tobaccos, and it is used mostly

for the outer wrapping of the better grade of native cigars. This tobacco burns well and is known by foreign buyers as "Cover," "Inner Cover," and "Core." These three grades or classes are packed separately in jute packages weighing about 40 kilos each for export.

"Golfero" comes from the region of that name on the shores of the Gulf of Cariaco, State of Sucre, near Cumana, where Cuban seed has recently been introduced and a superior grade of leaf produced. This tobacco has strength, aroma, and a good flavor, and burns well. It will last two years after packing. Packages for export are wrapped in banana leaves and weigh from 20 to 35 kilos. It is classed by foreign buyers as "Principal," "Half-tree," and "Sprouts."

"Guaribe" is strong, heavy in relation to its volume, and does not burn well. It is used as a mixture in domestic cigarette manufacture, to maintain the strength for some time. Packages are wrapped in jute and weigh 40 to 48 kilos each.

"Cocorote" has a delicate leaf, light in weight and of considerable strength, being used mostly in the manufacture of domestic cigars and classified as "Cover," "Inner cover," and "Core." Packages are wrapped in native agave-fiber covering and weigh approximately 40 kilos each for export.

"Cumana," also from the region of the Gulf of Cariaco, near the port of Cumana, may be classified in the same way as the "Golfero."

"Quebrada Seca" has light weight and strength but is little used for cigarettes, being consumed in a cheap grade of strong domestic cigar.

"Guacharo" also comes from the Gulf of Cariaco region near the Guacharo Caves, where the soil has a heavy impregnation of bat guano. This tobacco is considered the best produced in Venezuela; the leaf is small and delicate and much in demand by manufacturers of the better grade of cigars. The quantity produced is too small to permit its use in domestic cigarette manufacture. The entire Guacharo crop is packed, without classification, in packages weighing 20 kilos, wrapped in banana leaves, and tied with native agave cord. An outer covering of jute is then added for better protection of the fine leaf.

PRODUCTION AND DOMESTIC CONSUMPTION.

The total production of tobacco in Venezuela is calculated at approximately 4,000 tons per year, from various distinct districts and of varying quality, as follows (1 metric ton=2,205 pounds):

Metric tons.		Metric tons.	
Maturin	1,500	Cocorote	300
Capadare	1,000	Quebrada Seca	50
Salom	300	Guacharo	3
Golfero	1,100		
Guaribo	100	Total	4,353

Of these tobaccos the superior grades, which command the highest prices, are those from the districts of Golfero, Capadare, Salom, and Maturin, producing the best grade of leaf in the country, which is, in turn, divided into three classes—first, second, and third—and used as the base for the mixtures entering into the elaboration of the better grades of native cigarettes.

The cigarette-manufacturing industry of Venezuela uses each year no less than 1,200,000 kilos (1 kilo=2.2046 pounds) of tobacco, consuming about 30 per cent of the first three grades mentioned, the rest of the tobaccos used being of second and third class.

The domestic manufacture of cigars takes about 1,000,000 kilos of tobacco, which, added to the consumption in the making of the native cigarettes, amounts to about one-half of the country's production of tobaccos, leaving the other half for exportation.

The average price of Venezuelan tobacco (considering the various districts of production and classes of leaf) may be said to be about 3 bolivars (\$0.58) per kilo.

Venezuelan exports of tobacco from 1915 through 1919 are shown below:

1915:	Kilos.	1918:	Kilos.
First half-----	43, 000	First half-----	217, 000
Second half-----	297, 000	Second half-----	2, 532, 000
1916:		1919:	
First half-----	281, 000	First half-----	230, 000
Second half-----	193, 000	Second half-----	382, 000
1917:			
First half-----	45, 000		
Second half-----	79, 000		

The actual present consumption of cigarettes in the Republic is more than 4,000 boxes per month, each box containing 100 dozen packages of 10, 12, 14, and 16 cigarettes each. In some districts of the country only the types containing 12, 14, and 16 cigarettes are purchased by the public in large quantities, the Federal District being the largest consumer of the higher grades containing only 10 cigarettes in each package. This last-mentioned grade is ruinous for the manufacturers under present conditions on account of the high cost of the better grades of tobacco, the low prices obtained for the better grades of cigarettes, and their limited consumption. A standardization of this grade by agreement between the various factories has not been brought about on account of the keen competition existing in the industry, involving special discounts to the distributing trade and a heavy advertising expense.

Some method of standardization would be very beneficial, but the first step would necessarily be the introduction of uniformity in the types having 14 and 16 cigarettes per package, to be sold at retail at 0.37½ and 0.50 bolivar (\$0.072 and \$0.096) per package, respectively, which would make the wholesale prices: Type of 14 per package, 16 bolivars (\$3.09) per ring of 4 dozen packages; type of 16 per package, 20 bolivars (\$3.86) per ring of 4 dozen packages.

A plan that would involve control of the raw material has been suggested to the cigarette manufacturers of the country. A contract is proposed between the manufacturers and the capitalists interested in the business.

Tobacco production in Venezuela varies with the conditions of the season and the demand for the product. The following data on production are approximate and are taken from averages for the five years 1914 to 1919, being valuable principally as showing the proportion of production of each class of leaf per district. (The tons given are metric tons of 2,205 pounds each.)

Maturin.—1,000 tons of "Principal," "Half-tree," and "Core" in the following proportions: "Principal," 20 per cent; "Half-tree," 30 per cent; "Core," 50 per cent.

Capadare.—700 tons: First quality, 40 per cent; second quality, 60 per cent.

Salon.—250 tons: "Outer leaf," 20 per cent; "Inner leaf," 30 per cent; "Core," 50 per cent.

Golfo.—700 tons: "Principal," 20 per cent; "Half-tree," 30 per cent; "Core," 50 per cent.

Guaribe.—100 tons: Equal proportion of the three classes.

Cocorote.—300 tons: "Principal," 20 per cent; "Half-tree," 30 per cent; "Core," 50 per cent. ("Cumana" is included in "Golfo.")

Guaracho.—200 tons of one class only.

The grades of lesser importance, such as "Urachiche" and "Guanape," are included in the respective amounts given for Cocorote and Guaribe. Those of Orinoco, Paya, and Tovar are not taken into consideration on account of the very small production.

The total value of tobacco exported from Venezuela in 1917 amounted to 237,000 bolivars (\$45,741) and in 1918 to more than 4,000,000 bolivars (about \$800,000).

The total amount of capital invested in tobacco cultivation in Venezuela is estimated at 10,000,000 bolivars, or approximately \$2,000,000.

Caracas market quotations for September 15, 1920, gave the following prices for domestic leaf (on the basis of 46 kilos=100 pounds):

Maturin:	Bolivars per 100 pounds.
"Principal"	185
"Seconds"	120
"Sprouts"	70
Salon:	
"Capa Fina" ("Outer")	280
For cigarettes	260
Second class	140
Third class	110
Capadare:	
First grade	240
Second grade	120-150
Guaribe:	
First grade	160
Second grade	100-110

EXPORT STATISTICS.

Tobacco exports from Venezuela amounted to 126 metric tons in 1917, valued at 119,774 bolivars (\$23,116) while exports for 1918 were 2,751 metric tons, valued at 3,179,903 bolivars (\$613,721), going principally to Cuba and France.

Figures for the year 1919 (the latest available statistics) show the following exports of tobacco by countries of destination:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Ports of shipment and countries of destination.	Kilos.	Bolivars.	Ports of shipment and countries of destination.	Kilos.	Bolivars.
FROM LA GUAIRA.			FROM LA GUAIRA—continued.		
Bonaire: Leaf	10	25	France:		
Canary Islands: Leaf	4,436	2,662	Cigarettes	4,055	19,759
Curaçao:			Leaf	35,748	29,808
Cigars	361	1,950	Martinique:		
Cigarettes	489	2,450	Cigars	89	1,000
Leaf	338	1,230	Cigarettes	17,744	83,832

Ports of shipment and countries of destination.	Kilos.	Bolivars.	Ports of shipment and countries of destination.	Kilos.	Bolivars.
FROM LA GUAIRA—continued.			FROM CARUPANO.		
Netherlands: Leaf.....	223,496	564,818	France: Leaf.....	82,124	103,750
Spain: Leaf.....	10,680	8,544	Netherlands: Leaf.....	17,300	49,557
Trinidad:			Trinidad: Leaf.....	5,521	10,503
Cigarettes.....	450	2,100	Total.....	80,967	105,363
Leaf.....	75	45			
United Kingdom: Leaf.....	188,352	361,329	FROM CRISTOBAL COLON.		
Total.....	485,611	1,077,772	Trinidad: Leaf.....	18,238	15,059
FROM MARACAIBO.			FROM OTHER PORTS.		
United States: Leaf.....	4,592	9,184	Various destinations: Leaf....	409	991
FROM PUERTO CABELLO.			Totals by classes:		
Aruba: Manufactured tobacco	125	80	Cigars.....	455	2,990
Bonaire:			Cigarettes.....	22,855	109,491
Cigars.....	5	40	Leaf.....	611,735	1,192,133
Leaf.....	80	360	Manufactured, n.e.s.....	430	2,140
Manufactured, n.e.s.....	155	90	Grand total.....	635,475	1,306,754
Curacao:					
Leaf.....	1,722	3,465			
Manufactured, n.e.s.....	90	970			
Netherlands: Leaf.....	18,884	30,803			
Total.....	21,061	35,808			
FROM CIUDAD BOLIVAR.					
Trinidad:					
Cigarettes.....	117	1,350			
Manufactured, n.e.s.....	60	1,000			
Total.....	177	2,350			

The manufacture of domestic cigarettes is one of Venezuela's most important industries, and from it the Government derives one of its principal sources of internal revenue. This tax yielded, in the year 1918, 6,430,139 bolivars (\$1,241,017), which, with the additional import duty of 56,586 bolivars (\$10,921) on imported cigarettes, gave the Government a total net revenue from this source of 6,486,726 bolivars (\$1,496,787). The tax is 1 centimo (1 bolivar=100 centimos) on every cigarette—collected by means of the stamped paper that is furnished to the manufacturers by the Government.

LOCAL CIGARETTE FACTORIES.

There are 13 cigarette factories in Caracas which are operated by private capital under the supervision of the Ministry of Finance. Two of these factories are very large and modern in every respect. La Industrial Cigarrera has a capital of 1,000,000 bolivars and was established in 1917, the management being Italian. The other large factory is that of the Unión Fabril Cigarrera, with a capital of 3,125,000 bolivars (\$603,125) and was established in 1911. The principal stockholders are Venezuelans and Germans long resident in the country. The Unión Fabril Cigarrera's bonds are quoted at 40 per cent and the stock at 3 bolivars (\$0.58) per share. The Industrial Cigarrera stock is quoted at 25 bolivars (\$4.82).

There is very keen competition between the domestic tobacco manufacturers, and considerable sums are being spent in advertising and propaganda work. Many different brands are being put out by each

factory, and the importation of paper for the fancy packages makes a rather large item.

The market has reached the stage of absolute saturation at home, and, unless means can be found to export this manufactured product, no great development can be looked for without an increase in the number of native consumers. The lack of population also holds back the production for export, which could be made a very considerable source of wealth for the country if labor were more plentiful, as soil and climate conditions are ideal in several regions of the country, and there can be no doubt that, with better and more scientific methods, the very best grades of leaf tobacco could be produced for export in many places in Venezuela.

VENEZUELAN MARKET FOR AMERICAN CIGARETTES.

In the spring of 1919 the following report was forwarded from Caracas by American Minister Preston McGoodwin and was published in Commerce Reports:

American-made cigarettes have become popular in Caracas and elsewhere in Venezuela. This demand, which is now noticeable to the most casual observer, was brought about regardless of the fact that there has been no advertising or other formal campaign, and also despite the exceedingly high price charged for these products. Not a dollar has been expended for advertising, either by local dealers or through advertising agencies in the United States. As to the prices, which are fixed arbitrarily, as on all other articles, whether imported or of native manufacture, a package which retails in the United States for 15 cents sells in Venezuela for 45 cents; those that are standard at 25 cents retail in Caracas for 60 to 75 cents.

Nearly every man, woman, and child in Venezuela over 9 years of age smokes cigarettes, yet Americans have never cultivated this trade, and American cigarettes were not introduced until about 1917; then they were stocked by retailers in small and insufficient quantities. Egyptian and other British-made cigarettes were not introduced until July, 1918, and during the latter part of that year English companies began making an effort to cater to the trade. In the opinion of three Caracas dealers with whom the subject has been discussed, a slight effort upon the part of American manufacturers through the American import and export and commission firms recently organized in Venezuela—as, for example, W. R. Grace & Co., G. Amsinck & Co., Gaston, Williams & Wigmore, and the American Trading Co.—especially if accompanied by an advertising campaign, would result favorably. These informants pointed out that the demand has already been created in Venezuela for the blended cigarettes which contain a portion of Egyptian tobacco and are of moderate price. The cheaper grades of American cigarettes, made almost if not entirely of Virginia, Carolina, or Kentucky tobaccos, are said to be too strong.

It is very necessary that American cigarettes should be packed in tins. Dealers unanimously and vigorously assert that they are compelled to keep small stocks and charge what they frankly admit are exorbitant prices because American cigarettes are packed only in fragile pasteboard boxes—even containers for 50 and 100 are pasteboard—and they mildew within a month after arrival. To my personal knowledge repeated efforts have been made by merchants in the Tropics to induce American cigarette manufacturers to follow the example of English, Spanish, and Dutch makers. In this connection I bought on the same day two containers of American and English cigarettes, of 50 each, both popular brands. The American cigarettes were in a very handsome and expensive cushioned paper box, lined with silver paper. The dealer informed me that these cigarettes were received three weeks before, and, because of the exposure to the sea and the humidity of the Tropics, they were already moldy and slightly discolored. On the other hand, the English cigarettes were in a tin box, and I found that of 11 brands of English cigarettes now on sale in Caracas all are in tin containers, securely sealed, and with small patent openers attached. In this manner they will, of course, keep fresh indefinitely.

An American firm exporting tobacco products mailed a copy of the above report to its traveling salesman, who happened at the time to be in Porto Rico. He went immediately to Venezuela and sold one order amounting to \$10,000, which represents a greater quantity of cigarettes than were ever imported in any one year, and other orders aggregating an amount greater than the total importations of cigarettes for the last five years. As a result of data supplied to his firm by this traveling salesman regarding the cigarette industry in Venezuela, it is possible that this commercial report will bring about even more important results.

The American cigarette is steadily increasing in popularity in Venezuela, especially in Caracas, where many of the better known brands are now being sold. American cigarettes are now sold at wholesale at Curaçao, Willemstad being a free port.

Foreign-made cigarettes were not common in Venezuela until 1918. Imports of cigarettes in 1919 were as follows:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Ports of entry and countries of origin.	Kilos.	Bolivars.	Ports of entry and countries of origin.	Kilos.	Bolivars.
La Guaira:			Puerto Cabello:		
Cuba.....	760	17,717	Cuba.....	24	130
Netherlands.....	53	968	United States.....	442	5,210
Spain.....	192	958	Ciudad Bolivar:		
Trinidad.....	355	3,156	United States.....	437	5,211
United Kingdom.....	38	893	Total.....	3,180	46,578
United States.....	336	4,723			
Maracaibo:					
United States.....	543	7,612			

Import duty into Venezuela on foreign-made cigarettes and manufactures of tobacco is placed at 10 bolivars (\$1.93) per kilo (2.2046 pounds) of gross weight, plus the internal stamp revenue of 1 centimo per cigarette. This duty is not excessive on such a product, and the prices of foreign cigarettes in Venezuela should be lower. Wholesalers charge at the rate of 1.50 bolivars (\$0.29) per package to the local retailers, who charge 2.50 bolivars (\$0.48) per package.

COTTON.

Cotton is a natural product of Venezuela, was first cultivated in 1782, and became important during the Civil War in the United States. After that time and up to within the last 20 years the industry had declined on account of the low prices, and the industry was gradually abandoned. In 1800 the exports of cotton were 450 metric tons (1 metric ton=2,205 pounds) a year, in 1850 300 metric tons, and in 1888 only 57 metric tons. In 1913 Venezuela exported 267.3 metric tons of raw cotton, valued at 280,600 bolivars (\$54,156).

Cotton grows in nearly all of the warm regions of Venezuela, but the best results have been obtained in the States of Carabobo and Aragua, which to-day produce 54 per cent of the entire yield of the country. Sufficient cotton has been produced in Venezuela, since and during the war, to supply the domestic mills, while prior to that time quantities had to be imported from the United States despite the import duty of 3.43 cents per pound on raw cotton. On account of the

lack of sufficient labor there is little likelihood that cotton will become an important item of export from Venezuela. In 1912-13 the port of La Guaira exported some 200 bales, of which about half went to Germany.

In 1916 cotton received considerable attention in the Maracaibo Basin and the Andean State of Tachira, where an excellent grade of strong white cotton was produced, giving 30 per cent of clean fiber. The yield near Maracaibo was estimated at 40,000 quintals (1 quintal=100 pounds) for 1916, the first planting having taken place five years previously. That same year the Caribbean State of Sucre took measures to increase the cotton production of the suitable lands along the shore of the Gulf of Cariaco; seed was distributed and every means used to increase production for the domestic market.

The Venezuelan staple is long and silky and about 1- $\frac{5}{8}$ inches long. The seed is sown at the same time as corn and beans, during the month of July, and the cotton is picked at the end of November or the beginning of December, according to the season and rainfall. The corn or beans are planted between the rows of cotton, and in many cases these crops pay for the expenses of cultivating and harvesting, or, at least, planting and cultivation. Picking often continues until the end of March.

In 1918 the States of Zulia, Trujillo, and Merida (the Maracaibo Basin) produced between 2,500 and 3,000 bales of 500 pounds each, principally near Maracaibo, where, on account of climatic and labor conditions, it is impossible to increase production to any great extent. In the city of Maracaibo there are three small gins, namely, those of Cosino, Hermanos ("La Mota"), Angel Ma. Quintero ("La Paulina"), and Julio A. Añez y Cía. ("La San Antonio").

During the war high prices greatly stimulated cotton production, and this was also aided by the Government, which distributed cotton seed. Incomplete figures of production are: Valencia district—1908, 254 metric tons; 1912, 3,002 tons; 1915, 1,130 tons; 1916, 1,223 tons; 1917, 1,931 tons. Portuguesa district—1916, 605 metric tons; 1917, 1,944 tons. These figures do not represent the entire production and are for seed cotton. Locusts are disastrous at times and are responsible for the drop in production in the Aragua and Carabobo regions, indicated in the 1912-1915 reports. The climate and the soil is better suited to growing the upland varieties than sea-island or Egyptian.

In 1919 a careful survey of cotton growing in Venezuela showed an approximate total yield of 7,000 metric tons in the seed. Two and three-fourths quintals of raw cotton are required to obtain 100 pounds of clean fiber. This represents an average of 28.5 per cent of the cotton in the seed, making the production of clean cotton equal to 1,995 metric tons.

This cotton is produced in the following regions: States of Aragua and Carabobo, 1,077,300 kilos, or 54 per cent; States of Lara and Portuguesa, 279,300 kilos, or 14 per cent; State of Zulia (Maracaibo), 359,100 kilos, or 18 per cent; eastern States, 279,300 kilos, or 14 per cent; total, 1,995,000 kilos.

The prices paid for domestic cotton have fluctuated during the 10 years 1910 to 1920 between 70 and 150 bolivars (\$13.50 and \$29) per 100 pounds. The high figure of 150 bolivars was paid during the last

half of 1919 as a result of the high price of cotton in the United States. The total production of 1919—1,995,000 kilos of clean cotton—was sold at the high rate (average) of 3.25 bolivars per kilo, or \$0.285 per pound, the total value being 6,483,750 bolivars (\$1,296,750), making this product rank next to coffee and cacao in importance for the country. Venezuelan cotton is classified as No. 2; Egyptian cotton is classified as No. 1. The cotton produced in the country is of very fine grade of fiber, but, on account of the lack of care in picking and handling, a uniform length is not obtained and it is therefore given a lower grade than the medium grades from the United States, being worth on an average only 28.5 cents per pound when cotton in the United States sold for 34 to 38 cents per pound. The State of Zulia (Maracaibo region) produces the best grades of fiber in Venezuela, but, on account of the rough and unfinished kind of cloth made by the domestic mills and the inability to classify the fibers properly, this advantage is lost.

Seed is generally replanted every year. The entire investment in cotton planting in Venezuela is estimated to be about 1,000,000 bolivars, or nearly \$200,000 United States currency. Plows and cultivators are now being used by nearly all of the larger cotton planters in the Valencia district, and the steady increases in the purchases of gas tractors will be a powerful factor in increasing the annual production of the country.

The following are the most recent figures on cotton production in Venezuela from official sources, covering the year 1920:

States.	Kilos.	States.	Kilos.
Anzoategui.....	50, 000	Miranda.....	35, 000
Aragua.....	1, 044, 432	Monagas.....	30, 000
Carabobo.....	2, 453, 200	Sucre.....	230, 000
Cojedes.....	9, 800	Trujillo.....	600
Falcon.....	627, 000	Yaracuy.....	460, 000
Guarico.....	198, 000	Portuguesa.....	50, 000
Lara.....	125, 000	Zulia.....	1, 840, 000

As a result of the conditions brought about by the war, Venezuela is now an exporter of fats; domestic cottonseed-oil factories have been started, and the product competes with the cottonseed-oil articles imported from the United States and also with Italian and Spanish olive oils. In 1920 experimental shipments of refined cottonseed-oil products were made to Porto Rico, but it was found that the Venezuelan product could not compete with the refined products of similar character from the United States. Also, there remained in the country a surplus of refined oil from the preceding year (1919), the domestic consumption not being sufficient to utilize all of the domestic product, of which the greater amount is used in soap making.

There is one cottonseed oil mill in Cumana, one in Caracas, four in Valencia, and two in Puerto Cabello, the total average annual production of pressed and refined oil being given as 2,000,000 kilos (1 kilo=2.2046 pounds).

(For details concerning the cotton factories and oilseed mills, the reader is referred to the several district reports beginning on p. 118.)

Imports of cottonseed oil into Venezuela have always been small, amounting to \$1,647 in 1912, of which the United States shipped by far the largest amount, with Germany the only other competitor.

Imports of olive oil totaled more than \$200,000 per year before the war and the development of Venezuelan refining of cottonseed products. In 1912 Venezuela took olive oil to a total value of \$203,646, of which Italy furnished \$62,502 worth, Spain \$109,307, and France \$9,751, with Germany, the United States, and the Netherlands furnishing small amounts to make up the total. In 1916 olive-oil imports were valued at \$191,784, with Spain leading; and in 1918 the amount was only \$87,931, with Spain still leading. In 1919 the value was \$109,710. The reduction in imports of this article was due to war conditions and also to the supplanting of the imported article by the domestic refined cottonseed product. By the end of 1920 only the finer grades of olive oil were being imported, put up in bottles and small tins.

SUGAR.

Venezuela's exports of sugar (including "papelón") for the years 1917, 1918, and 1919, according to Venezuelan figures, are shown in the following table:

[Metric ton=2,205 pounds; bolivar=\$0.193.]

Countries of destination.	1917		1918		1919	
	Metric tons.	Bolivars.	Metric tons.	Bolivars.	Metric tons.	Bolivars.
Total exports.....	15,370	6,685,109	14,936	5,481,140	17,388	7,848,372
Curacao.....	9,235	4,157,283	8,527	3,292,880	5,586	2,673,438
Netherlands.....	23	11,810	55	23,455	117	46,884
Spain.....	161	86,626	1	644	87	85,615
United States.....	5,940	2,411,129	6,275	1,741,904	8,297	3,432,073

NOTE.—Shipments to Curacao come from Maracaibo, the largest sugar-producing region of the country and are intended for ultimate transshipment to the United States. The above table does not show heavy shipments of brown sugar ("papelón") that were made, during the years given, to the United Kingdom.

The following table shows the imports of cane sugar to the United States from Venezuela during the calendar years 1918, 1919, and 1920, according to official American statistics:

Years.	Pounds.	Value.
1918.....	16,511,375	\$746,485
1919.....	12,351,618	566,585
1920.....	8,827,567	1,176,844

(For details of sugar production, the reader should consult the chapters on the several commercial districts, beginning on page 118.)

RICE.

After corn, rice is the great food staple of the people of the country, as in other tropical lands of Latin America. From 1913 to 1919 Venezuela has imported an average annual amount of rice estimated at 5,985,123 kilos (1 kilo=2.2046 pounds). In 1918 and

1919 imports of rice into the country decreased on account of the inability of the sources of supply to take care of the world's demand and also on account of the increasing domestic production in the country itself. Prices for rice in Venezuela had tripled since the outbreak of the war. It was worth, on an average, 0.29 bolivar (\$0.056) per kilo in 1913, and had increased to 0.87 bolivar (\$0.168) in 1919. The imports in 1913 cost the country 1,719,384 bolivars (\$331,841) and in 1919, 2,295,649 bolivars (\$443,060).

The total production of rice in Venezuela for 1920 was estimated at about 500,000 kilos, which represents approximately one-sixth of the domestic demand, despite the fact that there are in Venezuela many localities and great areas of land very suitable for rice cultivation. The native rice is also a better grade (in spite of the crude methods employed in its cultivation and preparation for market) than the "Siam Usual" brand ordinarily imported. The great difficulties of the industry are the facts that the rice areas are far removed from the large centers of consumption and that their climatic conditions are bad and their population sparse. These conditions permit importers at La Guaira (Caracas) and Puerto Cabello, as well as Maracaibo, to offer the imported article at very advantageous prices.

It has been found that the native seed soon deteriorates and that the seed known as "Honduras" has given the best results in the country, being of the "upland" variety, growing at elevations of 1,000 to 3,000 feet, and even higher, wherever there is moist alluvial soil. The method of cultivation is very simple, and the production is from 100 to 120 for 1, while the common seed formerly used gives only from 60 to 80 for 1. There is a demand for small rice-cleaning sets in the country, including the small ovens for drying.

(For details of rice production, annual imports by ports, etc., the reader is referred to the chapters on the several commercial districts, beginning on p. 118.)

Imports of rice into Venezuela for the two pre-war years 1913 and 1914, by countries of shipment, were as follows, according to Venezuelan figures:

	1913	1914
Total imports	\$288,607	\$396,906
United States	16,281	63,630
Great Britain	9,734	17,934
France	307	10,856
Germany	106,088	86,922
Netherlands	150,986	196,052

As a result of the general dislocation of the customary trade routes brought about by the war, the rice trade gravitated to New Orleans, where dealers were active in taking care of the Latin-American market for this staple, handling American rice and also rice imported from Asia.

The following table shows the exports of rice from the United States to Venezuela during four recent years, according to official United States statistics:

Years.	Pounds.	Value.
Fiscal year 1917.....	9,411,231	\$424,389
Calendar year 1918.....	473,800	36,107
Calendar year 1919.....	1,361,415	112,739
Calendar year 1920.....	2,206,804	190,796

The falling off of rice exports to Venezuela from the United States during 1918 was due to the restrictions of exports during this country's participation in the war and also to the increased home production of Venezuela.

GENERAL PHASES OF AGRICULTURE—EXPORTATION OF FOOD-STUFFS.

The agricultural zone of Venezuela covers approximately 300,000 square kilometers (1 square kilometer=0.385 square mile), including all kinds of soil and variations in climate, according to the location and elevation. In the fiscal year 1918 the country exported 52,000,000 bolivars (more than \$10,000,000) worth of agricultural products, representing an investment of more than 230,000,000 bolivars (\$44,400,000).

A recent survey of the agricultural wealth of the country by the Bureau of Commerce of the Ministry of Foreign Affairs showed the following investment:

	Bolivars.
Coffee.....	80,000,000
Cacao.....	62,000,000
Sugar-cane.....	57,000,000
Tobacco.....	10,000,000
Rubber.....	10,000,000
Cotton.....	1,000,000

Exclusive of the exports of the two great staples of the country—coffee and cacao—Venezuela has been able during the war to export quantities of beans, corn, and peas to the United States, as well as to increase its customary exports of grains to the West Indies, principally Curaçao and Bonaire. This trade was, of course, attracted by the general shortage of food grains brought about by war conditions, with the resulting high prices, and did not always represent an actual surplus over and above domestic needs of the country, as, on account of these exports, the food staples of the country—brown sugar, corn, and beans—became scarce and high in price, and this constituted an added burden on the people of the country.

La Guaira shipped 1,774,597 pounds of beans to the United States in 1917, valued at \$68,690. For the same year, corn shipments from all ports to the United States totaled 19,850,647 pounds, valued at \$490,855; and during 1918 Venezuela sent 5,535,510 pounds of corn to the United States, valued at \$143,025. The country's total exports of corn in 1917 were 13,595 metric tons, valued at 2,859,176 bolivars (\$551,821), and in 1918 a total of 15,905 tons were exported, valued at 3,987,698 bolivars (\$769,626). In 1918 Curaçao received 6,408 tons, Trinidad 4,277 tons, the United States 2,568 tons, and Cuba 1,146 tons. During 1918 exports of beans and peas totaled 746 tons, valued at 334,133 bolivars (\$64,488), of which the United States

received 12,502 bushels of beans, valued at \$31,012, and 4,794 bushels of peas, valued at \$14,691. In 1917 shipments of beans and peas to the United States had been even greater, totaling 20,052 bushels, valued at \$48,446.

The condition at the time of the 1920 fall harvest was that, with the exception of the usual demand from the West Indies (principally Curaçao), the foreign market for the surplus production of corn and beans had ceased with the return to normal conditions following the war. Corn and beans, and even sugar, could no longer be exported to the United States and compete with domestic prices in this country. However, the lack of rain in the eastern part of the country had caused a partial crop failure in that section, and the large surplus of the largest producing center of the Valencia district had a prospective outlet by coastwise shipment to Barcelona, Cumana, and Carupano. All over the country domestic prices on all staple food products were being materially reduced.

LAND LAWS OF VENEZUELA.

Venezuela has an area of approximately 394,000 square miles and a population of about 2,800,000 people. It is one of the least developed countries of South America. The population is increasing very slowly and for all practical purposes may be considered stationary, as the increase by immigration is just about equaled by emigration from the country, despite the efforts of the Government to attract foreign immigration for the development of the country's agricultural resources.

According to the land laws of July 4, 1912 (now in force, with the exception of certain amendments having to do with more recent legislation on petroleum and coal lands, forest areas, etc.), the public lands of the Republic belong to the States and Federal Territories, but their administration and alienation are functions of the Federal Executive. Public lands may be sold, leased, granted gratuitously, or conceded to railway enterprises, or permission may be given to exploit them for their natural products—except forest lands, whose conservation may be deemed convenient or desirable by reason of public utility; those destined for municipal commons (parks); lands set aside for colonization by foreign immigrants, or for the use of the uncivilized natives (Indians); and those within certain distances of the sea, of lakes, of rivers, and of salt springs or deposits.

Any Venezuelan or foreigner, in the enjoyment of his civil rights, may buy or lease public lands. Certain public officials, as well as foreign Governments, are prohibited from buying or leasing such lands, nor can foreign Governments obtain permission for the exploitation of them for the natural products, or for railway purposes.

The maximum area that can be sold to any one person is as follows: First-class agricultural land, 100 hectares (1 hectare=2.47 acres); second-class agricultural land, 200 hectares; first-class grazing land, 2,500 hectares; second-class grazing land, 5,000 hectares. In case, however, the full amount granted has all been cultivated, an applicant can be granted an additional amount. First-class agricultural land can not be sold for less than 40 bolivars (\$7.72) per hectare, second-class agricultural land, 25 bolivars (\$4.82) per hectare; first-class grazing land, 2,000 bolivars (\$386) per square league (2,500

hectares); and second-class grazing land 1,200 bolivars (\$232) per square league.

In the case of a corporation legally constituted in the Republic, the President is empowered to increase the amount of land sold if he deems it for the best interests of the nation.

Anyone desiring to acquire public lands must make application in writing to the governor of the State in which the lands are situated, who will forward the application to the land commissioner of the district; and, if there is no opposition, the survey, valuation, and classification of the land is ordered by the Minister of Fomento (Development). When finally approved by the Ministry of Fomento, a deed is issued to the interested party on the payment of the price, which may be made in bonds of the national internal consolidated debt, or their equivalent in cash at the current market price. The deed must then be recorded in the register's office of the district in which the lands are located. (The bonds of the national internal consolidated public debt could be purchased in 1920, at the time of the writer's investigation, at a discount of about 30 per cent.)

The President of the Republic is authorized to lease public lands for a term of 15 years, at the rate of 4 bolivars (\$0.77) per hectare per annum for first-class agricultural land; 1 bolivar (\$0.19) per hectare for second-class agricultural land; 100 bolivars per annum for first-class grazing land per 25 square kilometers (\$19.30 per annum for 8.65 square miles); and 75 bolivars (\$14.47) per annum for the same area of second-class grazing land.

The lessee must cultivate at least one-third of the area leased during the first five years, and must establish himself thereon not later than one year after date of the lease. No person can lease in one concession more than 5,000 hectares, but corporations may be allowed a greater amount.

Persons desiring to lease public lands must present their applications to the governor of the State in which such lands are located, and must pay the costs of survey and other necessary expenses.

Public lands may also be granted gratuitously to a person already occupying such lands as have been cultivated by him or by his ancestors, in case such lands are contiguous to those he occupies.

Permits may be granted for one year for the exploitation of public lands for the purpose of securing rubber, gums, fruits, and other natural products. A license will be issued for each 1,250 hectares, varying in cost from 10 to 300 bolivars (\$1.93 to \$57.90).

COLONIZATION CONTRACT MADE IN 1920.

A contract has been made between the Venezuelan Government and a native of Germany for lands in the State of Monagas totaling 73,000 hectares (1 hectare = 2.47 acres), of which 40,000 hectares are destined for the uses of a colony and 30,000 hectares are ceded to the contractor for 50 years, with an additional 3,000 acres for the contractor near Maturin, the chief town of the region. The hills to the north are very well suited to cacao and coffee cultivation, while the level southern part is suitable for tobacco, corn, cotton, and sugar cane. There are abundant natural grasses for cattle feed. It is thought that this recent colonization concession is part of a plan for the control of the cattle-raising and meat-packing industry of Vene-

zuela. There is given below a translation of the contract (copies of the Venezuelan law of immigration and colonization and of the Venezuelan land laws, to which reference is made in the contract, may be examined upon application to the Bureau of Foreign and Domestic Commerce, mentioning exhibit No. 43635):

Between the Minister of Fomento (Development) of the United States of Venezuela, sufficiently authorized by the Federal Executive, on the one part, and Mr. Emil Zimmerman, of legal age, a native of Germany and resident of Caracas, in the following known as "the contractor," on the other part, the following contract:

ARTICLE 1. The Federal Executive, by virtue of the powers granted by articles 94 and 98 of the law of immigration and colonization, concedes to the contractor the right to mark out limits, within one year from the date of publication in the Official Gazette of the law approving this contract, of a section or lot of land of 40,000 hectares (98,841.6 acres) of public lands destined for colonization by German immigrants, which lot of land shall be selected within the following zone:

On the north, a line parallel with the boundary of the State of Sucre, distant 1 kilometer (0.62 mile) from the boundary throughout its extent; on the east, the boundary of the district of Acosta, continuing to the town of Sabaneta; on the south, a line starting from the said town of Sabaneta, running to the middle of the course of the River Taguaya, continuing thence toward the east, passing through Guanaguana and San Francisco, and from there to the division of the waters south of the Rio Colorado, to a point 8 kilometers south of the source of the said river; on the west, a line starting from the above point and leading directly north to within 1 kilometer of the boundary of the State of Sucre.

ART. 2. The contractor shall present within two years the plan that he selects, drawn by an authorized engineer or land surveyor.

ART. 3. The contractor obligates himself:

(a) To carry out the subdivision of the tract at his own expense.
(b) To establish thereon at least 100 German agricultural families within two years.

(c) To donate to each of the first 100 families a lot of 25 hectares (61.77 acres) of land suitable for agriculture and 10 hectares (24.71 acres) more of the same class of land for each son over 10 years of age, in conformity with articles 74, 78, and 80 of the above-mentioned law.

To this end, and also with the object of authorizing him (the contractor) to make sales referred to in the following article, there is considered as effected, by virtue of this contract, the alienation, in favor of the contractor, of all the lands of the lot or section contracted for, under the condition of forfeiture expressly stipulated in article 7.

(d) To construct, on the land destined for the purpose, a building embodying the conditions stipulated in article 72 of the above-mentioned law (Ley de Inmigración y Colonización).

(e) To give to each family free lodging during one year.

(f) To proportion to the immigrant colonists who ask for them, as an advance, agricultural instruments and tools, draft and breed animals, seed and maintenance for one year at least, not charging for these advances other than the actual cost plus 20 per cent and simple interest of 10 per cent per annum on all such sums. However, in no case is the contractor obligated to advance to any one family more than 1,000 bolivars (\$193 at par).

(g) Not to require reimbursement of these advances except in five equal annual payments, which shall begin at the end of the second year.

(h) To allow the intervention of the Colony Office in the contracts made with the colonists, the object being to prevent infraction of the law on the matter.

(i) To subject himself to the laws, decrees, and resolutions relating to the administration and development of colonies.

(k) To pay, on his own account, all the expenses of ocean passage and other expenses from the port of embarkation to the port of debarkation of the immigrants, including their transportation to the colonies, subject to the compensation established in articles 8 and 9 of this contract; and, finally, to respect the rights of third parties.

ART. 4. The sale of the pieces of land not donated and of building lots shall be made by the contractor in conformity with the law of immigration and colonization, the proceeds of such sales being devoted to the purpose specified in article 104 of the said law.

ART. 5. Also, the contractor obligates himself to comply with article 96 of the law of immigration and colonization and, in general, to comply with all of the dispositions pertinent to this contract.

ART. 6. This contract shall endure for 10 years, dating from the publication of the law by which it is approved; that is, the said term is conceded to the contractor in order that he may fulfill all the duties that he hereby assumes, except where a shorter term may be expressly stipulated with respect to determined obligations.

ART. 7. Upon the expiration of the period of 10 years to which the foregoing article refers, the contractor, if he shall have complied with the obligations which he is assuming, shall have all the benefits enumerated in article 101 of the law of immigration and colonization, but the contractor shall lose in fact and in law the ownership of the lands upon which the conditions outlined in paragraphs 2 and 3 of article 101, above mentioned, have not been fulfilled, and also the title to the lots sold or donated to those colonists who have not fulfilled the conditions under which these were conceded.

The Federal Executive shall assume the administration of the lands which, by virtue of the foregoing dispositions, return to the category of public lands.

ART. 8. In compensation for the expenses assumed by the contractor, according to paragraph *k* of article 3 of this contract, the Federal Executive concedes to him in usufruct for 50 years a tract of public lands of 30,000 hectares (74,131.2 acres), which he shall select within the zone delineated as follows:

On the west, a line starting from Sabaneta and running north to the eastern boundary of the district of Acosta, and following this boundary line to within 1 kilometer of the boundary of the State of Sucre; on the north, the line parallel with the boundary of the State of Sucre (distant 1 kilometer) to the Cano (Slough) San Juan; on the east and south, the Cano San Juan to the mouth of the Rio Asagua, following this river to its source and from there to Sabaneta.

Moreover, the contractor shall receive in usufruct for 50 years a tract of 3,000 hectares (7,413.12 acres) of lands around or near the so-called Laguna Grande to the east of Maturin, capital of the State of Monagas.

The contractor shall present to the Minister of Fomento the respective topographical map of these two lots within the same period indicated in article 2 of this contract.

ART. 9. At the termination of the period of 50 years above mentioned, the contractor shall be the proprietor (owner) of all the lands conceded according to article 8 of this contract that are planted with major crops or trees of fine woods.

ART. 10. The exploitation of the natural products of the lands referred to in this contract shall be governed by the legal regulations applicable to lands that are private property, and, in consequence, the Federal Executive can not contract with any third party for their exploitation.

ART. 11. This present contract shall be submitted for approbation of the National Congress in the next sessions, so far as concerns the agreement for alienation of public lands, but if the contractor should immediately bring in immigrants, these and the contractor shall enjoy the rights that chapter 4 of the law of public lands (Ley de Tierras Baldias y Ejidos) grants to the occupants.

ART. 12. As the Federal Executive does not advance any sum to the contractor, by reason of this contract, he is exempt from the bond (surety deposit) referred to in paragraph 10 of article 94 of the law of immigration and colonization.

ART. 13. This contract may be transferred, but not without previous permission of the Federal Executive; if it be acquired by a foreign company, such company must establish in Venezuela its legal residence.

ART. 14. All debts and controversies of any nature whatsoever which may arise from this contract and which can not be amicably settled by the contracting parties shall be decided by the competent courts of Venezuela in conformity with its laws, without recourse, from any motive whatsoever, to foreign diplomatic intervention.

Two copies are made of this contract, both of the same tenor and effect. In Caracas, the thirtieth day of September, one thousand nine hundred and twenty, 111th year of independence, and 62nd year of the Federation.

G. TORRES,
Minister of Fomento.
EMIL ZIMMERMAN.

The foregoing contract may be regarded as an example of the conditions under which the Venezuelan Government will grant lands for foreign colonization projects.

REGIONS SUITABLE FOR DEVELOPMENT.

In considering the problem of land colonization in Venezuela, it should be borne in mind that the country lies wholly within the Tropic Zone and that conditions are those of the Tropics, with the exception of the higher elevations of the Andean region, at present only accessible by way of Maracaibo at an enormous freight cost. Climatic conditions like those of Central Europe and the Middle West of the United States can only be found at elevations of 6,000 to 7,000 feet above sea level, and this means practical inaccessibility so far as development on a large scale is concerned.

The good agricultural and grazing lands of the Valencia district, the most highly developed region of the country, were all taken up long ago, and the same is true of the more immediately accessible lands elsewhere within easy distance of seaports or railways giving access to market centers. Any agricultural development scheme carried out on public lands would necessarily have to include the provision of transportation means for the new colony.

Large areas of good lands open for colonization can still be had along the eastern slopes of the Andes in the States of Portuguesa and Zamora, where, in the regions of Guanare and Barinas, large areas of good lands can be found at elevations of 3,000 to 4,500 feet above sea level. The distance overland to market or to the coast is, however, too great at present, and a railway is needed for the proper development of this region.

Another region where open, level stretches of good lands are found is that along the southern bank of the Orinoco west of the Caroni River and as far as the Paragua River. This area is about 1,000 feet in average elevation, well drained and watered, and conditions are suitable for semitropical agriculture.

The region covered by the recent concession to the proposed German colony in the State of Monagas is, perhaps, the best left in the country, as easy access is afforded by means of the Cano San Juan from the Golfo Triste.

The Government of Venezuela is very well disposed toward colonization plans by foreigners, and very favorable terms may be expected by responsible parties planning such development on a large scale, though provision does not seem to be adequate to the needs of individuals or small groups of colonists. Recent immigration has been taken care of on the estates of the large landowners of the Maracay and Valencia districts. A favorable attitude toward colonization by foreigners is also recorded on the part of the governments of the more undeveloped States and Territories, and also of the merchants in the trading centers.

REGULATIONS GOVERNING CONCESSIONS FOR LUMBERING.

The first regulations governing the granting of timberland concessions in Venezuela were published in the early part of 1920, the decree providing the following conditions: (1) The zone in which lumbering is contracted for shall not exceed 10,000 hectares (1 hectare=2.47 acres). (2) Concessionaires, before signing the contract, shall deposit in the Bank of Venezuela as a guaranty of compliance with the provisions of the contract the sum of 500 bolivars (\$96) in currency, or its equivalent in bonds of the internal national consolidated debt of 3 per cent. (3) The concessionaires shall contract to carry on the exploitation in such a way that the taxes which they must pay to the National Treasury shall not be less than 1,200 bolivars (\$232) per year, which they must pay in any event (that is, the minimum rate of payment is the amount of 1,200 bolivars per annum to the Government). (4) No more than one contract can be entered into with any single person or company—a provision which shall govern also for the purposes of the assignment of such contract.

LAW ON FORESTS AND WATERS.

The old law of 1915 was amended and enlarged by the new law of July 15, 1919 (Nos. 61 and 110). The conservation and protection of the forests, rivers, streams, and springs were declared of public utility and were made subject to the new law under the administration of the Bureau of Public Lands, Industries, and Commerce of the Ministry of Fomento (Development). Forests and springs on private lands also were put under the provisions of the new law so far as provisions for their conservation were concerned. River water for irrigation or other purposes was made subject to the old dispositions of the Civil Code. Under this law come all contracts for the exploitation of forest products such as chicle, rubber, balata, balsam of copaiba, etc.

GOVERNMENT AIDS TO AGRICULTURE.

Twenty per cent of the people of Venezuela are engaged in agricultural work. This proportion is not sufficient for an extensive development of the country's resources. A larger population is necessary, together with the introduction of more modern methods and a more general application of modern agricultural machinery.

A Central Board of Industrial Improvement existed for some years in Venezuela, and more than 20 years ago agricultural clubs were organized in the principal cities of the country through its efforts. This board recommended the establishment of agricultural colonies and the provision of an agronomic station by the Government. Fourteen years ago there existed the Agrarian Institute, which started an agricultural museum and the School of Agriculture. The Agronomic Station published a guide to the industries of the country in 1913. Legislation of March 12, 1917, created the new Agricultural and Forest Experimental Station near Caracas, and an American expert (Prof. H. Pittier, of the United States Department of Agriculture) was put in charge until 1920, the station now being under the direction of a Venezuelan.

Fourteen years ago a new law created the City Mortgage and Rural Credit Bank, which was authorized to make loans on city

and country real estate at 7 per cent annual interest, with the terms of repayment fixed at 10 to 60 years. On rural property this bank could lend up to one-third of the appraised value, and loans were repayable by deposits on account from 50 bolivars (\$9.65) upward, such payments earning 4 per cent annually. The capital of this bank was fixed at 25,000,000 bolivars (approximately \$5,000,000), and the bank could issue mortgage bonds for a sum equivalent to the value of the loans made. Although provision was made for offering the bonds in small denominations to the public, the plan was never taken up, for various reasons. Most of the people are too poor to invest in such securities, and there is not sufficient capital in the country, under present conditions, to take care of the crop movement and commerce. Since the time mentioned, a new plan modeled after the Federal farm loan act of the United States has been advocated in Venezuela, but so far without result.

FIBER RESOURCES.

Plants of the agave family grow wild in many parts of Venezuela, more particularly in the semiarid regions of Barquisimeto and Coro (that is, throughout the so-called Segovia Highlands), where there are enormous areas of land suitable for the cultivation of sisal, henequen, and similar species of fiber plants. There is a small, native household industry in the production of "cocuiza" fiber (a species of agave), from which cordage, hammocks, and bags are made.

The Fábrica Nacional de Fibras y Cordeles (National Fiber and Cordage Factory), of Caracas, for several years held a contract with the Government by which, in return for the admission duty free of sisal fiber, the company was obligated to import sisal plants and to instruct agriculturists in their planting and cultivation. The concession (1916) called for the planting by the company of 200,000 plants of sisal (*Agave sisalana*) or other similar plant—not more than 2,000 to the hectare (2.47 acres)—and to supply up to 25,000 plants annually among prospective growers, with books of instruction. The factory in Caracas imports, on an average, 250 tons of cleaned sisal fiber per month, and this amount was allowed to be imported free of duty for the period of six years from the date of the concession. At the present time the company has a fine plantation near Guacara in the Valencia district, the land containing 200,000 plants; cutting was started last year, the leaves being gathered for the fiber after the fourth year.

With the exception of a few local patches of cultivated fiber plant, the only other large plantation of sisal or henequen in the country is that of Gen. Gabriel A. Lacle near Coro. About 1,000,000 sisal plants on this estate reached the producing age in 1917, and machinery was imported and installed during the month of October, 1917. The National Government, as long ago as 1910, endeavored to arouse interest among landowners in fiber production, but the principal difficulties seem to be the universal lack of sufficient cheap labor and the more attractive field offered to capital in the cultivation of coffee nearer the present centers of social and commercial life. At the present time the export price for Venezuelan fiber is too low to attract capital to this industry, and the domestic production easily takes care of the domestic demand.

TANNING MATERIALS.

Divi-divi is an exceedingly cheap source of tannin, but prior to 1913 its use was not very extensive in the United States. During 1914 only 29,000 pounds were imported, the price per pound at port of shipment being, on an average, 1.6 cents. The consumption of divi-divi in Germany is much more important. During 1913 Germany imported 951 metric tons from Colombia and 5,092 metric tons from Venezuela (1 metric ton=2,205 pounds). The total exports of divi-divi from Venezuela for the same year amounted to 5,371 metric tons.

The tannin is found in the seed pods of the *Caesalpinia coriaria* (Willd.), the tree growing to a height of 20 to 30 feet. It is indigenous in the West Indies, Mexico, Venezuela, and northern Brazil, being found in considerable abundance throughout the semiarid lands along the north coast of Venezuela. The pods contain 40 to 45 per cent of tannin, very similar to that present in valonia. This tannin is most abundant in the tissue of the pod, under the epidermis. There is little in the seeds. A typical analysis of the pods gives the following results:

	Per cent.
Water	13.5
Tannin	41.5
Nontannins	18.0
Ash	1.6
Insoluble	25.4
Carbohydrates	8.4

To 100 parts tannin come 20.2 parts carbohydrates. The tannin consists of a mixture of ellagitannin and gallotannin. It is accompanied by a considerable amount of oily and mucilaginous matter. Divi-divi tannin is easily separated in the form of a concentrated extract, but this latter (as well as the ordinary solutions for tanning purposes), on account of the presence of the above-mentioned foreign matters, are liable to undergo sudden fermentation, especially during electrical storms. In the course of fermentation a deep-red coloring matter is developed, which imparts to leather a dark stain. It is a problem, not yet solved, how this fermentation may be effectively avoided. The use of ordinary antiseptics has been of some assistance as a preventive. As a rule, divi-divi tannin is mixed with various barks or their extracts. Leather made by the use of divi-divi extract alone is apt to be firm in dry weather but soft and spongy in damp weather. Ordinarily it is used as a substitute for gambier in the dressing of leather and in the rapid drum-tanning of light leathers. Sometimes its use is simply as a dyestuff.

Divi-divi was first imported from Caracas in 1769, by Spaniards. By 1848 it had come into widely extended use. The chief ports of shipment from Venezuela are La Guaira and Maracaibo.

The fact that the tannin content of the divi-divi pod is contained in the form of a white powder lying just under the skin or covering of the pod causes loss in shipment when the product is much handled in transit; and the high freight rates during the war also led to the establishment of an extract factory in Venezuela, located at the port of Porlamar, island of Margarita. In 1917, the pure tannin being put up in pressed tablets for export under a patented process into which neither heat nor chemical composition entered. The product ready

for export contains 80 per cent of tannin and 16 per cent of tannic glucose. In 1918 another small factory was started at La Guaira for the same purpose.

The plant grows wild throughout the country—but is found chiefly along the coast of the Caribbean Sea and in the sterile plains of the interior, at the foot of the southerly slopes of the Coast Range of mountains. The hot lowlands, with a minimum of rainfall, are where it thrives best, and therefore it is most found in the States of Lara, Falcon, Zulia, and Sucre. The tree also grows well in the lowlands and more fertile plains of the great llanos, but the supply there is too far removed from transportation to make it commercially available at the present time. It takes about 20 years for a tree to reach full development and give a maximum production of 138 kilos (1 kilo=2.2046 pounds) of pods per annum. This is an average production figure for the Cumana region, but in the western portion of Venezuela the production per tree is much lower, being from 18 to 24 kilos in the Maracaibo region and only 12 kilos in the Barquisimeto region.

There has been no systematic cultivation of the divi-divi in Venezuela, although two attempts have been made, one near Maracaibo and the other near Cumana, where trees were set out and a small plantation formed like those that are found on the island of Curaçao, where the tree is carefully cultivated. As a rule, the pods are merely raked up off the ground, separated from the dirt and chaff, and then sacked and shipped in this form. The old method of shipment was to lay the loose pods in the lower hold of sailing vessels with hardwood logs as ballast, but most of the product is now handled in sacks by steamers.

Maracaibo, La Vela de Coro, Tucacas, Puerto Cabello, La Guaira, Guanta, Puerto Sucre (Cumana), Pampatar (island of Margarita), Carupano, Cristobal Colon, and Ciudad Bolivar are all ports of export for this product, being given in the order of their relative importance in the trade. A large portion of the production of the Coro and Paraguana Peninsula region of the State of Sucre, as well as that of the northern part of the State of Zulia, is carried to Curaçao in small sailing schooners and reexported from Willemstad to the United States.

From 1874 to 1882, from Maracaibo alone there was exported 12,291 metric tons of divi-divi. In 1883 the price of divi-divi averaged 120 bolivars (\$23.16) per ton at port of shipment, but at present it varies from 70 to 100 bolivars (\$13.51 to \$19.30) at Cumana and from 110 to 140 bolivars (\$21.23 to \$27.02) per ton at Maracaibo.

Venezuela's exports of divi-divi from 1908 to 1919 have been:

Metric tons.		Metric tons.	
1908.....	5, 829	1914.....	5, 203
1909.....	7, 346	1915.....	5, 668
1910.....	8, 979	1916.....	7, 758
1911.....	10, 902	1917.....	5, 061
1912.....	7, 720	1918.....	7, 055
1913.....	5, 371	1919.....	8, 843

There are a number of other valuable tanning materials found in Venezuela, but none are exported except divi-divi and mangrove bark, though many are used by native tanners on a small scale. Exports of mangrove bark amounted to 433 metric tons in 1917, 379 tons in 1918, and 114 tons in 1919, most of the amounts going to the United States.

MINING.

GENERAL SURVEY OF RESOURCES AND OPERATIONS.

There is scarcely a mineral that can not be found in some part of the vast territory of Venezuela, though the principal mineral resources at the present time consist of gold, copper, coal, and petroleum. In 1550 various expeditions prospected the regions of the country for gold mines. The copper mines of Los Teques (18 miles from Caracas) were discovered in 1560 and actively worked until the hostility of the Indians put a stop to the operations, which have never been resumed in modern times. The copper mines of Arao, Pao, etc., were discovered in 1584. As long ago as 1896 the Government listed a total of 226 mineral deposits, of which 62 were of gold, 29 coal, 14 copper, 10 iron ore, 7 sulphur, 7 lead, 6 asphalt, 6 rock crystal, 1 diamonds, 2 platinum, and the remaining 73 of various metals. The number of mining companies actively engaged in mining operations in 1917 were 16 exploiting gold-bearing claims, 9 copper claims, 8 asphalt properties, and 97 prospecting for petroleum.

Gold exists in nearly all the States and Territories of Venezuela, but the only mines being worked are those in Venezuelan Guiana, in the region of the Yuruary River.

Copper is found in the region of the famous Aroa mines, in the State of Yaracuy, and there are unexploited deposits near Coro, Carabobo, Barquisimeto, and Merida.

Iron ores are found at the previously worked deposits of Imataca, on the Orinoco, in the mountain range near Coro, in the State of Falcon, and near Barinas, Barcelona, and also Cumana.

Lead is found in a mine near the River Tocuyo, whence very good samples have been taken. In the vicinity of Caracas there is a lead mine that appears to contain a large quantity of the ore, according to recent explorations.

Asphalt exists and is worked near Guanaco, at the famous Bermudez Asphalt Lake, in the extreme eastern part of the country, and there are deposits near Guanta and also in the region of Lake Maracaibo.

Coal is found in large deposits in vein formation near Barcelona, in the Naricual fields, near Coro, in the State of Falcon, and in the State of Zulia, west of Maracaibo.

The official statistics of the Department of Hacienda (Finance) for 1916-17 show that during that fiscal year Venezuela exported, in round figures, 9,000,000 bolivars (\$1,800,000) of gold, more than 64,000,000 bolivars (\$12,800,000) of magnesite, more than 1,000,000 bolivars (\$200,000) of copper, and the same value of asphalt. The aggregate production of mineral wealth exceeded 75,000,000 bolivars (approximately \$15,000,000).

The public revenue derived from this branch of income amounted to 821,935 bolivars (\$164,387) in 1918, of which the greater portion came from taxes on asphalt and petroleum operations and exportation.

LEGISLATION AND REGULATIONS—BUREAU OF MINES.

The most recent legislation on coal and petroleum is contained in the decree of June 19, 1920, entitled "Law on hydrocarbons and other combustible minerals" (a translation of which may be obtained upon application to the Bureau of Foreign and Domestic Commerce or any of its district or cooperative offices, referring to Exhibit No. 18034).

The "Direction" or Bureau of Mines, created by executive decree of April 19, 1909, was combined with that of Public Lands, Industries, and Commerce under one head until June 1, 1918, when it was found that mining activity had so increased that a separate bureau had to be established by the Government.

MINING CODE.

The Code of Mines of 1909 was also found to contain certain deficiencies harmful to development of this important industry. In 1915 there was sanctioned a new code, constituted by the present mining law, in force since June 27, 1918. This new law, adapted to national necessities and customs, offers the greatest possible liberty and numerous advantages to the contractor (concessionaire), guaranteeing at the same time the interests of the nation and providing an additional national revenue.

Among the important reforms contained in this new mining law is that of free importation of mining machinery and materials for the working of mines, as well as of lighting plants, power plants, ventilating plants, equipment, and utensils for mining operations, in addition to chemical laboratories, assaying equipment, etc. All equipment and materials for reduction plants are also included in this free import list.

COURSE OF MINING DEVELOPMENT.

In 1911 mining in Venezuela began to increase in several regions of the country. The production of gold in the State of Bolivar increased, as did that of copper in the State of Lara (mines of Arroa) and asphalt in the States of Sucre and Monagas. During the year 1913 the country was explored by numerous groups of engineers and geologists interested principally in oil.

The mineral production of Venezuela did not fall off during the war, as is seen from the following figures:

1916—Gold production, 1,910 kilos; copper, 2,533 tons; asphalt, 47,201 tons; coal, 27,007 tons.

1917—Gold, 958,304 grams; copper, 42,270 kilos; asphalt, 54,071 tons; petroleum, 18,249 kilos; coal, 20,164 tons.

1918—Gold, 712,007 grams; copper, 29,708 kilos; petroleum, 48.3 tons.

DECREE OF SEPTEMBER 19, 1914.

Under date of September 19, 1914, a decree declared as inalienable the mines of coal (anthracite and lignite), petroleum, asphalt, and pitch, which up to that time had not been acquired by companies or private individuals. The Federal Executive, on assuming the direct administration of these classes of mines, had in mind the necessity for organization, in order that, without removing these mines from production activity, such deposits could not, in any case, pass

into private hands; the main idea was to conserve for the nation these valuable reserves for the future, with special attention to coal, which, on account of the growing scarcity of vegetable fuel (wood), with the great increase in transportation and industry, has become an article of first necessity.

REGULATION OF OCTOBER 9, 1918.

On the 9th of October, 1918, a new regulation was issued governing the exploration and exploitation of coal and petroleum and other combustible materials. This indicates in a very clear manner the procedure for acquiring concessions, and at the same time, like the mining law, allows great liberty and advantages to the concessionaires and also protects the fiscal department of the nation.

ASPECTS OF ACTIVITY IN OIL AND COAL.

With respect to petroleum it is interesting to note that the Caribbean Petroleum Co.—the largest oil company interested in Venezuela and the corporation owning the contract made with Dr. Rafael Max Valladares on January 2, 1912, for the exploration and exploitation of coal and petroleum deposits in the States of Sucre, Monagas, Anzoategui, Nueva Esparta (Margarita Islands), Tachira, Trujillo, Merida, Zulia, Lara, Falcon, Carabobo, Yaracuy, and Delta de Orinoco—selected and designated a total of 1,028 deposits, certain of which have since been renounced, and now pays the Government a total of 168,195 bolivars (\$32,462) for those in actual exploitation and 269,000 bolivars (\$51,917) annually on those from which this company has not, as yet, obtained oil. The company also pays a tax on all oil produced and a supplementary tax on refined products, such as gasoline, that are consumed in the country.

The activity in oil in Venezuela has been such that in 1918 there were 66 contracts made by the Federal Executive, covering 710,270 hectares (1 hectare=2.47104 acres), on which, according to the provisions of the new law, there has been deposited the sum of 54,000 bolivars (\$10,422) in cash, and on which, moreover, from the time of publication of the contracts in the Official Gazette, there will be paid an annual tax of 0.05 to 0.10 bolivar (\$0.0096 to \$0.0193) per hectare as an exploration tax.

Coal has also been attracting attention. In 1918 there were 15 concessions given by the Government, covering 145,232 hectares. On December 31, 1916, the Republic had adjudicated 700 mines, with a total surface of 391,858 hectares, of which 159,721 hectares were by "denouncement" (location) for gold, copper, lead, etc., and 232,137 hectares by contract with the Government for petroleum, coal, asphalt, etc. Of this total, there were declared in exploitation 118 concessions, with a total surface of 75,853 hectares.

The total revenue from the petroleum branch during 1918 amounted to 1,053,900 bolivars (\$203,403) and from other mining activities (for mines of gold, copper, etc.) to 821,938 bolivars (\$158,634). In 1917 the number of denouncements was 97, in 1918 it was 119, and 135 locations were made in the first half of 1919.

Of 162 mines (other than those of coal and petroleum) under contract up to June 30, 1919, there are 16 gold mines, 5 copper mines, and 7 asphalt mines in actual operation.

CAPITALIZATION OF CERTAIN COMPANIES.

Some idea of the capital invested by the various companies may be gathered from the following partial table (1 bolivar=\$0.193):

	Capital, in bolivars.
Caribbean Petroleum Co.....	20, 782, 842
New Callao Gold Mining Co.....	20, 000, 000
New York & Bermudez Co.....	8, 914, 932
Colon Development Co. (Ltd.).....	4, 747, 000
Bermudez Co.....	4, 319, 820
El Dorado Rubber, Balata & Gold Mining Co. (Ltd.)..	3, 380, 000
Venezuelan Oil Concessions (Ltd.).....	2, 316, 354
Compañía Anónima Minera "La Cumaragua".....	1, 616, 354
Cara del Sol, Sol en el Cenit, Mi Fortuna, etc.....	660, 000
El Amparo.....	149, 022
Total	69, 686, 966

OWNERSHIP AND CONTROL OF MISCELLANEOUS MINERALS.

The new mining law of June 27, 1918, separates coal, petroleum, and other combustible minerals from all other minerals, and places them under the administration of the Federal Executive exclusively, under the conditions set forth in the new coal and petroleum law of June 19, 1920.

All wells, springs, and deposits of salt are national property and are exploited by the Government by direct account.

Deposits of sesqui-carbonate of soda ("urao") and carbonate of soda are subject to special terms of contract with the Federal Executive.

Construction stone, clays, slates, lime deposits, guano, sands, phosphates, and other similar materials are the property of the owner of the soil (whether private individual, company, or State or Territory), if on public land. The concessionaire of public lands is given preference in the location of natural fertilizers, etc.

Quarries of marble or porphyry, deposits of kaolin, magnesite, etc., when found on public lands, are subject to special contract with the Federal Executive.

Pearl fisheries, coral, sponge, ambergris, and other similar substances do not come under the mining regulations but are subject to the special regulations of the Executive.

ACQUISITION OF MINING CLAIMS OTHER THAN COAL OR OIL.

Mining claims can only be acquired by concession of the Federal Executive, in the form prescribed by this law.

These contracts and mining titles require the sanction of the National Congress, according to the provisions of the constitution.

All mining concessions may be freely transferred to any person or company, with the exceptions established by the law, which excludes foreign governments and companies not registered or incorporated in Venezuela. In all such transfers both the vendor and the buyer must obtain the previous consent of the Minister of Fomento (Development). Partial transfers are not taken into account, so far as the Executive is concerned.

All mining titles must be recorded in the registry office of the district in which they may be located.

The law distinguishes between the surface and the subsoil; the first begins at the surface and extends downward for a distance of 3 meters vertically (1 meter=3.28 feet), except when works of the proprietor of the soil may have been already extended to a lower level. The subsoil extends vertically downward indefinitely from the limits established for the surface soil, as above.

All mining concessions comprise only the subsoil when found on private property, the surface remaining under the ownership of the surface proprietor, except under the necessity of expropriation, as provided by the law.

The law presumes that the mine concessionaire will need to utilize the surface, and, in the event of failure to effect an arrangement with the owner of the surface, the law concedes the right of expropriation, with proof of necessity, in the following cases: For use as dumping ground, opening of galleries or shafts, construction of necessary edifices, tanks, shops, warehouses, etc., establishment of mills and machinery, transportation of product, etc.

Expropriation is accomplished under the judgment of the judge of the first-instance court having jurisdiction in the district of location, and the valuation experts must take account of the damage sustained by the owner of the surface.

The mining title in public lands not previously occupied gives the concessionaire the right to the use of the surface without more formality over the area contained therein, but only for the time of the concession and without prejudice of third-party rights. This does not include, however, the right to exploit the more valuable hardwoods, or rubber, or other vegetable products found on the land.

Clearings, dumps, and washings of abandoned mines are considered a part of the mine only until such land passes into the hands of some owner. The dumps of abandoned mines are regarded as common property until fenced or walled in.

Each concession gives the right to exploit all the minerals (except coal, salt, and petroleum, as mentioned) found within the boundaries of the grant, without further requirement other than that of advising the Minister of Fomento of the number and kind of minerals found and worked.

In contracts covering placer and gravel claims, the concessionaires must also fulfill the requirements for vein mines and mineral deposits if found on their concession, but they are given preferential right over other locators on the property. Six months' time is allowed to prove such preferential right.

Likewise, owners of veins or deposits are granted a preferential right to locate adjoining mining property, whether already free or recently open for location.

When, in working some claim, other mining property adjoining is invaded, the gross value of the ore or mineral extracted will be divided equally between the adjoining mining-property owners; but, if it is proven that the trespasser did not proceed in good faith, the owner of the adjoining invaded property shall be paid double the value of the mineral extracted, without prejudice of the other penalties of the law, according to the provisions of the Penal Code.

By virtue of the mining title granted by the Government, the locator, if not resident in Venezuela, must name a competent legal

representative who shall take care of notifications, payments of taxes, and other business in relation to the property. The legal residence of such agent of the owner must be in the district in which the mine is located or in the capital of the Republic (Caracas). A certified copy of the power of attorney must be attached to the title and records on file with the register. In the event of the death, resignation, or absence of the duly accredited representative, another such must be immediately named.

All mining concessions are considered as a contract, an implicit condition of which is that any dispute or controversy, of whatever nature, that may not be settled amicably by the contracting parties (i. e., the locator and the Government) shall be decided by the competent courts of the country, and according to the laws of Venezuela, without the intervention of foreign investigation or diplomatic claim.

ACQUISITION OF MINING CLAIMS BY FOREIGNERS.

The law expressly states that any and all persons or companies, national or foreign, can acquire mining property in the country, if in the enjoyment of their legal rights either in Venezuela or in their own country—with the exception of national public officers having administrative functions in mining (who can neither be admitted as partners in mining companies, nor engage in mining while in their term of office) and foreign governments or their representatives in Venezuela, the Government reserving the right to cancel immediately any concession if it is found that any public officer of the class mentioned, or any foreign government agent, is interested in the property in any way.

Companies and corporations domiciled in foreign countries must be legally constituted in Venezuela before they can acquire mining property, either by transfer of title or by location.

RIGHT OF DISCOVERY.

The law presumes, until the contrary is proven, that the mineral claimed to be discovered actually exists and that it is of industrial value and commercially exploitable. The discoverer of a mineral deposit or vein has the right to 1 per cent of the gross product for the period of 10 years of the working of the mine by others who may have legally "located" it. The discoverer of a mine has no discovery rights after 10 years unless the mine is located and worked within that time.

The right of location is by priority, always.

SIZE AND FORM OF CLAIMS.

The location of mines is determined by surface measurements from fixed points and lines, the hectare being taken as the unit of measurement. Subsoil measurements are to be determined by a series of planes.

Each mining claim covering a vein or deposit of mineral ore is 200 hectares (494.2 acres) in extent, measured and laid out in either square or rectangular form.

The extent of placer mines or other form of deposit which it is intended to work by mechanical means (dredging) can not exceed

2,500 hectares (1 hectare=2.47 acres), laid out in square or rectangular form. When it is a question of the working of river or stream beds or waterways, the demarcation will be made by a polygon of right angles.

FREE GROUND BETWEEN CLAIMS.

Free ground left between two or more claims, if this does not exceed 5 hectares in extent, will be conceded by the Executive to the first owner of adjoining property who may solicit it, following presentation of the plans and maps of the claims, properly verified and certified by the mine guard of the district, and the favorable report of the technical inspector of mines.

If a third party desires to obtain the intervening ground not covered by either of the adjoining claims, the procedure of location is to be followed; but if opposition is made by both of the adjoining mine-property owners, preference will be given the holder of the oldest title; and if only one adjoining owner makes objection, he will be accorded the preference as regards the new "denouncement" (location). If the open ground between claims, as above, is more than 5 hectares, then the adjoining property owners have no preferential rights and the claim of the first locator to comply with the legal provisions of location, as herein set forth, will be allowed.

For payment of taxes, all free space between claims will be computed on the basis of the hectare, fractions counting as 1 hectare.

TERM OF CONCESSION TITLE.

Claims and titles for vein mines are for a period of 90 years, all others being for 50 years' duration.

MINERAL DEPOSITS OF FREE PUBLIC USE.

Placer deposits of minerals occurring on public lands are considered common property when worked by hand and by the usual wooden pan, or other crude methods. This also applies to placers found on the navigable streams that come under Federal jurisdiction.

Placers being worked by the crude methods described are declared closed as soon as the use of mechanical means is proven, and fines are imposed for the continuance of pan work therein.

When these deposits (placers) are being worked by shafts to bedrock—called "barrancos" in Spanish—each "barranco" is defined by a square 10 meters on each side and of any depth. If a placer bedrock shaft is left unworked for six months its owner is no longer protected by the law. The placer right of free public use is precarious and can be altered by force of public interest.

CAUSES OF CANCELLATION OF TITLE OR CONCESSION.

Rights of location of mining claims are forfeited when the plan (map) of the claim is not presented within the six months allowed; when the errors noted by the Ministry of Fomento are not corrected; or when the amount to be affixed in stamps and stamped paper is not presented within one year from the date of material possession.

Rights under concessions are declared forfeited when the surface tax has not been paid during one year; when the term has expired;

when the owner expressly signifies his intention of abandonment or renouncement of the claim; when the owner fails to take action upon the second public auction of the claim for payment of taxes. The Federal Court of Claims has jurisdiction over cancellation of all mining claims and property. Canceled or abandoned claims become the property of the nation without cause of further action, and the nation is not responsible for any debts or claims appertaining to the former ownership of the property.

WATER RIGHTS.

The provisions of the law are liberal in allowing free use of water from rivers and streams for mine working and placers. In the event that two claims need the water of one stream or other source of supply, each is given a just, proportionate division of the water. Navigable streams can not be obstructed by mining operations or impediments to navigation formed by waste from the operations of placers or mines.

PAYMENTS TO THE GOVERNMENT.

Placer mines, gravel deposits, etc., pay a surface tax of 0.50 bolivar (\$0.0965) per annum for each hectare of surface during the first three years of the validity of the title, and 1 bolivar (\$0.193) per hectare per annum during the remainder of the term of the concession.

Vein mines pay 1 bolivar per hectare per annum for the first three years of the title, and 2 bolivars (\$0.39) per year during the remainder of the term of the concession.

When work has not been begun on a mine during the first three years of the title, or work has been suspended on account of circumstances over which owners have had no control (properly proved in each case), the surface tax on placers is 0.50 bolivar per hectare per annum, and on vein mines 1 bolivar per hectare per annum.

Payment of the production tax is obligatory from the time mineral is taken from the mine, as follows: For each gram of gold, 0.10 bolivar (\$0.0193); for each metric ton of copper ore, 0.60 bolivar (\$0.1158); for other minerals, 3 per cent of the mercantile value of the mineral extracted, calculated at the time of its extraction from the mine, according to the average price in the open market during the preceding six months. Concentrated minerals, or ores, pay a rate in proportion to the percentage of concentration to which they have been subjected.

Other payments include 5 bolivars (\$0.96) in revenue stamps on the concession document; 0.25 bolivar (\$0.048) in revenue stamps per hectare of claim area of vein mines; 0.03 bolivar (\$0.0058) in revenue stamps per hectare of claim area of placer and gravel claims. (These stamps are due when the title is issued.)

Solicitors of exploration permits pay 250 bolivars (\$48) per annum for every 1,000 hectares, or fraction thereof, of surface to be explored for minerals.

Books are kept in duplicate, duly authorized by the court having jurisdiction in the district, and all metals or ores exported must be declared—as to weight, value, and source of extraction (mine)—at the customhouse at port of shipment.

FORMATION OF MINING COMPANIES.

Companies incorporated for the purpose of mining development, of whatever character, come under the provisions of the Civil Code of Venezuela and have civil character before the laws of the country.

Foreign mining companies, in order to exploit mine properties in the country, must fulfill all the prescriptions of the special law governing companies incorporated in foreign countries (i. e., they must register under permit in Venezuela and provide legal residence and representation in the Republic).

The property, shares, and other assets of foreign mining companies operating in Venezuela are liable for all legal effects.

Mining property is declared to be real property and can be mortgaged in legal form, according to the civil laws of the country, with the exception that all claims of the Government have first preference before the law. Contracts of lease and sublease can be freely made, but with the previously obtained consent of the Minister of Fomento (Development).

RIGHT TO PROSPECT AND EXPLORE FOR MINERALS.

All Venezuelan or foreign citizens in the enjoyment of their civil rights can freely prospect and explore for minerals on public lands not under contract—making such shafts, tunnels, and other works as may be necessary for the discovery and opening up of veins and deposits, though the size of excavations is limited to 16 square meters (4 by 4 meters). The only formality necessary is to advise the nearest municipal, civil authority in the district of the intention to prospect.

On privately owned lands, public lands under rental contract with the Government, etc., no prospecting or exploration can be made without the previous consent in writing of the owner or renter. If the land in question is community property, the consent of the majority of the owners is sufficient.

In the event that permission to prospect is refused by the owners or renters of lands, the prospector has the right of appealing to the law of expropriation in that part which refers to temporary occupation of lands.

Houses, towns, cemeteries, located mines, or locations pending are exempt from the prospect rulings and can not be prospected or explored. No prospecting can be done within 1,600 meters of fortified places.

The ability of the person to acquire and work mines is taken into consideration when permits are granted.

After mineral veins or deposits have been found the procedure of location is as follows: A declaration is made in writing before the mine guard of the district, specifying the State, district, and municipality in which the mine is located, as well as the date of discovery, and a sample of the ore or mineral of not less than 2 kilos in weight is also presented with the foregoing document. Two competent witnesses are also necessary. The location declaration may also be made before a judge and sent in to the office of the mine guard. A receipt is issued by the mine guard's office and the document sent to the Ministry of Fomento in Caracas.

The location paper should also contain the name, nationality, residence, and profession of the locator, and if he is a foreigner, he must also include the statement and proof of his having fulfilled the requirement pertaining to foreigners, according to the provisions of the Civil Code. The papers are to contain the location of the mine (State, district, and municipality), surface of claim desired, with statement of definite location with respect to some well-known point or landmark of the district; the name of the adjoining claim and its owners, if any; name of the renter or owner of the land; class and kind of ore or mineral found, and its formation; and the declaration that the locator subjects himself to all the provisions of the mining law and to the obligation of the payments required, etc. Thirty days after the legalization of the document or declaration of location it is published by the mine guard for a period of 30 days in the capital of the district. In the event of opposition to the claim the locator has 5 days in which to make answer. All locations are by priority of time of location and declaration before the mine guard or judge, as the case may be.

After publication during the 30 days, the owner (locator) must proceed with the survey and measurement of the claim, having a licensed engineer or surveyor do the work and make the corresponding plans and maps. The relative location of the nearest adjoining mining property must be shown on the map of the new property. Material possession is given by the mine guard within 15 days after the presentation of the plans of the property by the engineer or surveyor. All documents and plans are then sent in to the Ministry of Fomento, where they are passed on by the technical inspector of mines for his report, which should be made within 20 days after their receipt by the ministry; this time can be prolonged by the minister, however, under the press of special circumstances in connection with the case. On approval by the technical inspector, the title is then issued by the Ministry of Fomento and presented to the Congress for approbation. Mining titles, when issued, are on official stamped paper and are signed by the President of the Republic and countersigned by the Minister of Fomento. A duplicate of the plan and documents in connection with the claim are returned to the owner by the ministry after issuance of title. This title must then be registered by the recorder and also copied by the mine guard.

Exploration taxes are paid every three months, payment being due within five days from the receipt of the liquidation notice by the owner of the concession. If payment is not made within the five days allowed, 10 per cent penalty is added. After lapse of payment for one year the property is sold at public auction, but all machinery and improvements become the free property of the Government.

[The details of all mining operations and regions are given in the reports covering the several commercial districts, beginning on p. 118.]

MAGNESITE DEPOSITS OF MARGARITA ISLAND.

Margarita Island was first discovered and named by Columbus on his third westward voyage in 1498, on his way to Santo Domingo (Hispaniola). The first settlement in what is now Venezuela was made on the neighboring island of Cubagua in 1500, where the Spaniards founded the city of New Cadiz, totally destroyed by earth-

quake and tidal wave in 1543. The first settlement by the Spaniards on Margarita was at La Asuncion in 1524. The island lies about 20 miles north of the mainland, with the islands of Cubagua and Coche between. It practically consists of two islands joined by a sand spit, the two divisions being equally rugged and mountainous. The western half is known as Macanao and contains but few inhabitants, the towns being all in the eastern half, or Margarita proper. With the surrounding smaller islands it constitutes the State of Nueva Esparta. The capital, Asuncion, is situated in a sheltered valley at the eastern end of the island; and to the southeast are the ports of Pamptar and Porlamar; the former is the port of import and export, but the latter has the largest population and is the headquarters of the fishing and pearl industries.

The western half of the island is dry and barren for the most part, but there is a limited industry in the raising of goats and a few cattle. The people are mostly fishermen. The entire island group has a population of about 40,000. Cubagua, once famous for its pearl fisheries, has a good harbor at the western end, and there are petroleum springs along the northern shore. Margarita, Cubagua, and Coche have abundant marine life, and the fishing is a constant source of livelihood for the people.

The pearl beds were what first attracted the Spaniards to Cubagua, Coche, and Margarita, and the industry has been continued with more or less success ever since, though the Venezuelan pearls are not considered as first class, like the oriental pearls. In recent years the industry was interrupted by a peculiar disease of the oysters called "turbio," which is said to be caused by the decomposition of the component parts of the sea water, resulting in a lack of oxygen and an excess of carbonic acid—the original cause being submarine volcanic disturbances. The Government prohibited the taking of the shell from January 1, 1918, to January 1, 1919, as a means of conservation of the industry. Fishing is carried on from small boats by means of oyster rakes, and the pearls and shell are sold to the local dealers. Permits are necessary with official license for fishing. In 1902 the value of the pearls taken was 2,145,480 francs (\$414,078) in the Paris market, and in 1903 it was 2,864,094 francs (\$552,770); then the value gradually declined until in 1912 only 137,100 francs (\$26,430) worth were exported—after which an increase took place until in 1917 the value of the pearls exported amounted to 1,524,650 francs (\$294,257).

The silicate deposits on the island of Margarita cover 1,700 acres on property totaling 7,400 acres in extent. The land surrounding the deposits is sterile and of small value otherwise, with the exception of the salt marshes in the neighborhood. The Bay of San Pedro Gonzales near by is valuable as a shipping port, as it has deep water, and wharves can be built, at small expense, for loading operations, which have heretofore been carried out by means of lighters. The magnesia occurs in massive veins and can be quarried out at an average cost of 75 cents per ton. Labor is plentiful at 50 to 75 cents per day of 10 hours, the class of labor found on the islands being far superior to that on the mainland. The property is located on the northern shore of Margarita Island from the tower of San Juan to the Bay of Gonzales (Galera), to Punta Caribe and

La Playa, and takes in the northwestern half of the bay and valley of Pedro Gonzales. There is said to be enough magnesite on Margarita Island to supply the United States for 50 years. One of the claims on the deposit is owned by the Magnesite Products Corporation, of New York and Philadelphia, and this concession has been approved by the Venezuelan Congress, thereby giving the corporation practically a legal monopoly. Other claims are owned by the American Magnesite Mining & Manufacturing Co. and the American Carbon Co., both of New York City.

Other reports state that the deposit on Margarita Island is not so large as is supposed and that only by consolidation of the various interests can the product be handled cheaply on a large scale.

So far as is known, there are only three other important deposits of magnesite in the world—in Greece, in California, and in the State of Washington—though the latter is of low grade. During the war the only available supply for the eastern market of the United States was that of Margarita. Cheap ocean freight is afforded by steamers returning from Curaçao after discharging coal. Prior to the war, magnesium was shipped to the United States from Europe as ballast, at a cost of \$8 per ton for the crude product, the low price being due to the low freight rate. Crude magnesite of first quality was never below \$10 per ton at Atlantic ports of the United States. Calcined magnesia was worth \$28 per ton in Philadelphia three and four years ago, while in 1918 its value was \$45 per ton. Crude magnesite was selling for \$30 a ton f. o. b. New York during the war, but this price does not reflect the market value under normal conditions of freight rates, etc.

On the property of the Magnesite Products Co. there are said to be 300,000 tons exposed in veins 1,230 yards long by 6 feet wide for a depth of 400 feet, forming a triangle in the hills. An analysis of this material showed the following result:

	Per cent.
Magnesia oxide.....	48.31
Lime (calcium).....	.43
Silica.....	.46
Carbon dioxide.....	50.03
Loss.....	.53

The cost of mining and handling was given as follows:

	Per ton.
Mining.....	\$0.75
Overhead.....	.50
Royalty.....	.20
Loading and handling.....	.50
Contingent.....	.25
	<hr/>
Freight to United States.....	2.20
	<hr/>
Total.....	3.50
	<hr/>
	5.70

The growth of the magnesium industry in Europe has been very great, the product being used in the industries for construction purposes, and in the arts, and this condition has been reflected in the United States by large imports of crude magnesite and the manufacture of magnesium carbonate, magnesia oxide, magnesia chloride, and magnesia sulphate. American imports are valued at \$2,000,000 a year for the crude material, the average values being given as \$7.75

per ton at New York and Philadelphia, while the selling price of the calcined magnesia varies between \$25 and \$30. Two tons of crude magnesia are required to produce 1 ton of calcined magnesia, the cost of reduction being less than \$1 per ton plus \$1.50 for barrels, making the total cost for 1 ton of the calcined product about \$18.

The material is used in the manufacture of carbon dioxide, oxy-chloride cement, refractory brick, toilet carbonate of magnesia, citrate of magnesia, sulphate of magnesia (Epsom salts), and caustic magnesia, which when combined with magnesia chloride produces an adhesive, resilient, nonexpanding, nonabsorbing, sanitary artificial stone of great durability and strength. This last-mentioned branch of the industry consumes the greater part of the material. Oxy-chloride cement is used in hospitals, office buildings, floors, decks of ships, etc.

At the present time magnesia is produced in the United States only in California, where the veins are small and the cost of production of the clean product is high. The Margarita deposit lies in a soft, decomposed serpentine formation, where it can be handled easily by steam shovels or other mechanical excavating equipment.

In 1917 exports of magnesia from Margarita totaled about \$200,000, according to the Venezuelan Government statistics. The latest reports show that there were about 2,000 tons on the loading dump at Galera Bay, but that the deposit was not being actively worked.

The deposit on Margarita Island has always been characterized as the highest grade of magnesia as yet discovered in the world.

PETROLEUM.

Although Venezuela is probably a potentially large producer of oil, its petroleum production at the present time is small, principally because of the fact that as yet there has been but little actual development. At the end of the first half of 1920 the gross production of the country had reached the total of 162,829 metric tons (1 metric ton=2,204.6 pounds), all of which, with the exception of 151 metric tons, had been produced by one company, the Caribbean Petroleum Co. The remainder is from the wells of a native Venezuelan company, La Compañía Petrolera del Tachira. The total production of the Caribbean Petroleum Co. in 1919 was 165,972 barrels, and in the first nine months of 1920 it was approximately 373,600 barrels. As a contribution to the oil supply of the world this quantity is not large, but it will undoubtedly be increased when more of the oil companies now engaged in exploration and development work begin active production.

LOCATION OF OIL FIELDS—QUALITY OF DEPOSITS.

Mr. Frederick G. Clapp, speaking before the American Institute of Mining Engineers at St. Louis in October, 1917, classified the petroleum fields of Venezuela as follows:

Caribbean district (in the vicinity of Lake Maracaibo): 1. In the district of Mara, near the River Liman asphalt lake, where ooziings of petroleum cover considerable areas. 2. Bella Vista, near the city of Maracaibo. 3. In the district of Sucre, on the eastern shore of Lake Maracaibo, where signs of petroleum have been found associated with asphalt deposits. 4. On the Sardinate River, extending into Colombia, where petroleum is developed on a small scale and sold locally. 5. In the district of Colon, in the State of Zulia, south of Lake Maracaibo, this being the largest and most accessible field in Venezuela developed at present. 6. The Perija field, 50 miles west of Lake Maracaibo.

Orinoco district, Pedernales field. This field is situated in the delta of the Orinoco River, at the place where one of its northernmost mouths empties into the Gulf of Paria. It includes portions of the islands of Capure, Pedernales, and Plata.

The petroleum of Venezuela occurs in many places in connection with asphalt deposits, several of which have been exploited for a number of years. The largest and most prominent of these deposits is the Bermudez Asphalt Lake, near Guanaco, 3 miles from the mouth of the Guanaco River, which joins the San Juan River about 32 miles from its mouth. It is about 1,000 acres in extent, being larger in area than the famous Trinidad asphalt lake, but much shallower. These asphalt deposits, together with smaller seepages of oil and asphalt and mud volcanoes, form the chief indications of petroleum in Venezuela.

The petroleum discovered thus far has been of varied quality. In one instance the oil was thin enough to flow readily, having a spe-

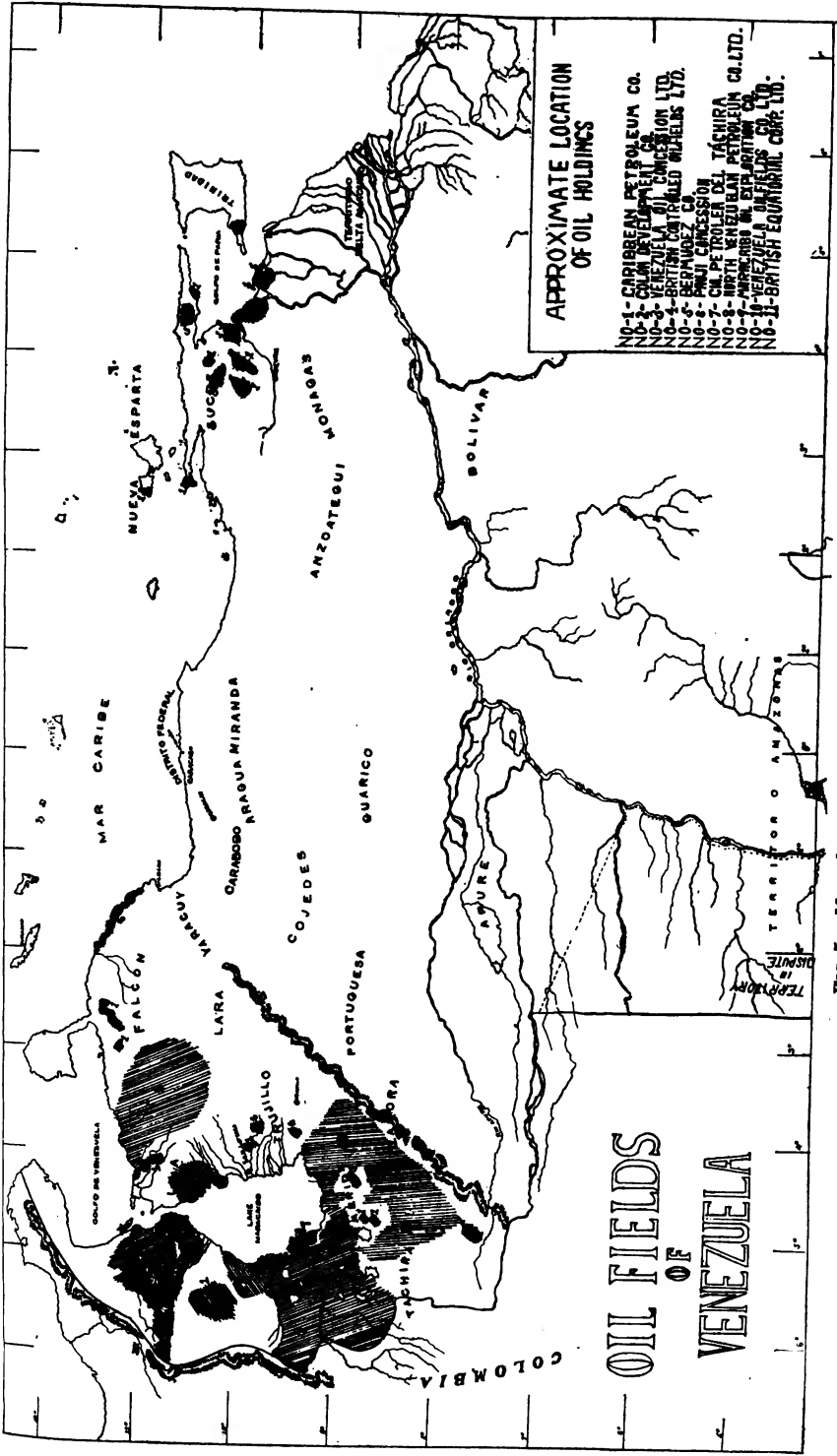


FIG. 5.—Map showing Venezuelan petroleum deposits.

cific gravity at 150° C. of 0.8837 (Baumé 29), while another deposit was very thick, being of the color and consistency of coal tar.

DIFFICULTIES RETARDING DEVELOPMENT.

Active exploration of the petroleum resources of Venezuela was begun in 1912 by both British and American interests. Development since that time has been greatly retarded, principally by the lack of transportation facilities. In the solution of the problem of getting machinery to the well site and of getting the oil to market lies the key to the oil industry in Venezuela. There are no roads, or even tracks, in those parts of the country where oil is found; roads have to be cut through thick jungle growth. There is a scarcity of labor, which has to be brought from some distance to the oil fields. Camps have to be built and goods transported for the maintenance of the labor force. All these are items of great expense, and, as a result, further development will of necessity be on a large scale.

The most important feature of the transportation situation has been the difficulty in getting the oil out of the country. In the whole of the developed oil district there is only one port, Maracaibo, and at this point there is a bar, the maximum depth of water over which is 12 feet, making entrance into the large shallow-water bay called Lake Maracaibo possible only for steamers of 12 feet loaded draft. The approach to the harbor is long and winding, and the position of the sand banks is continually shifting, so that the dredging of a permanent deep channel would be an undertaking of enormous cost and its maintenance would involve heavy upkeep charges. The use of lighters is made impossible by the roughness of the sea outside of the port. It is possible that this difficulty might be overcome as it has been in some parts of Mexico by the use of pipe lines running out to sea. Suitable anchorages on this part of the coast, however, are extremely scarce, and the pipe lines running from the oil fields to the coast must cover enormous distances.

The sanitary conditions in some parts of the oil region are bad. Where the country is open to the winds, little fault can be found on this score, but the sheltered and marshy districts are malarial and productive of fevers. Employees of the development companies have suffered from illness caused by mosquito bites, although this evil has been alleviated by covering the swamps with oil. As a result of export restrictions during the late war the oil companies experienced great difficulty in securing supplies and materials with which to carry on their operations, and there was little progress in petroleum development. Despite these difficulties exploration activities have continued at a rapid rate. Great sums have been expended by the few companies that have heretofore taken part in the development of the country's resources. That these expenses will be justified is the belief of a number of prominent geologists in the employ of these companies, practically all of whom agree as to the wealth of the Venezuelan deposits.

COMPETITION BETWEEN BRITISH AND AMERICAN INTERESTS.

It is admitted that strong competition exists in the Venezuelan oil field between British and American interests. At the present time British interests strongly predominate. Of the 12 oil companies

holding property in Venezuela, at least 7 are under British control, in most cases through the Royal Dutch Shell group and Barber Asphalt interests of Philadelphia. Although considerable areas are in American hands, the only producing company, although incorporated in the United States, is controlled by British interests. A number of large American companies have had representatives in Venezuela for several years past, and have conducted geological explorations, but as yet have not proceeded to develop their holdings. Among all the oil companies in the field there are only five that have begun exploitation of wells, and of these only one that has produced in exportable quantities. The others are of recent formation and are still engaged in exploration work.

(NOTE.—The following history of oil developments in Venezuela is based on a report submitted to Minister Preston McGoodwin, and published in Commerce Reports for Oct. 7, 1916, the information in which has been made current.)

CARIBBEAN PETROLEUM CO.

The Caribbean Petroleum Co. is affiliated with the Barber Asphalt Paving Co., of Philadelphia, with ownership vested in the General Asphalt Co., which is a subsidiary of the Barber interests, and the Royal Dutch Shell group, through the Anglo-Saxon Petroleum Co. (Ltd.), of London, the latter organization controlling the sales of the company. Substantial American capital is also involved. In 1912 this company acquired from the General Asphalt Co. the concession known as the Rafael Max Valladares concession (also "Tregelles"), granted to the original holders December 14, 1909. During 1912 and 1913 it employed a force of 35 trained and experienced geologists, assisted by a number of Venezuelan engineers, who covered nearly every foot of the country included in the concession, which called for exploration of a total of 27,697,000 hectares (1 hectare=2.47 acres), of which a total of 1,028 lots, located in the extreme western and eastern parts of the Republic, have been retained after the two years spent in exploration. Each area or lot measures 500 hectares.

For its preliminary work the company selected two sections for drilling, one on each side of Lake Maracaibo, State of Zulia, in the extreme northwestern part of Venezuela. In one of these sections, known now as the Mene Grande field, situated 16 miles from San Lorenzo on the eastern shore of Lake Maracaibo, about 60 miles southeast of the city of Maracaibo, there are now seven flowing wells, all producing in good quantity and ranging in depth from 600 to 1,700 feet. Material for this field had to be transported through swamps from the lake over a road built by the company. Properly screened houses were erected for the employees. Drilling with three rigs was commenced in January, 1914. Of the seven producing wells, five are capped, only two being allowed to flow at the present time. Enough work has been done here to prove that this is a commercial field. The other areas in the eastern part of the country are being explored for oil, and test drilling is going forward in the neighborhood of the town of Maturin, State of Monagas.

The field selected for exploration and drilling on the western side of Lake Maracaibo is about 50 miles from the lake. It was necessary to build a road for the transportation of materials over a level but

heavily wooded country. Equipment was delivered for drilling three wells. Two wells were put down to a depth of 1,000 feet and abandoned prior to April, 1915. In June, 1916, work was started on four additional wells, none of which gave favorable results.

The company is developing areas in other sections of the country, as it is required to do under its contract with the Government of Venezuela. Although the section on the west side of Lake Maracaibo undoubtedly contains oil in commercial quantities (as has been shown by subsequent drilling operations by other companies farther south), past production has been so small as to make impossible any predictions as to future possibilities. One well, known as Zambapalo, drilled to a depth of 1,227 feet, came in with a large production, but later became choked with sand. This district is known as the Perija field.

The Caribbean Petroleum Co. owns the only refinery in the country, which it has erected at San Lorenzo, the shipping point on Lake Maracaibo, and connected with its wells in the Mene Grande field by a 6-inch pipe line, 16 miles in length. As all of the crude oil exported from Venezuela has come from the wells of this company, so also all the refined petroleum products exported have come from its refinery at San Lorenzo. The specific gravity of the fuel oil sold from the refinery is about 980°, Baumé scale 13°, viscosity 68, and asphalt content 80 per cent. The crude oil used has a gravity of 16° Baumé scale, and gas oil 30° Baumé scale. The commercial gasoline runs as high as 71° Baumé, and kerosene about 39° to 41° Baumé.

The output in metric tons of the San Lorenzo for the three years ended June 30, 1920, is given in the following table:

[Metric ton=2,205 pounds.]

Products.	Year ended June 30—				
	1917 ^a	1918	1919	1920 ^b	Total.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Gasoline.....	219.7	1,130.1	1,926.6	1,312.9	4,589.3
Benzine.....			7.4		7.4
Mineral turpentine.....			9.3		9.3
Kerosene.....	479.1	2,089.7	2,603	1,274.1	6,645.9
Gas oil.....	327.5	935.2	455.4	203.6	1,921.7
Distillate.....	99.6	234.2	52.1		385.9
Fuel oil.....	4,041.8	12,650.2	38,186.1	26,185.2	81,063.3

^a Second half of year.

^b First half of year.

The annual exportation in metric tons of crude oil and refined products during the same periods was as follows:

Products.	Year ended June 30—				
	1917 ^a	1918	1919	1920 ^b	Total.
	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>	<i>Metric tons.</i>
Crude oil.....		2,309.1	2,160.7		4,469.8
Fuel oil.....	804.8	4,392.1	12,256.1	11,636.8	29,089.9
Gas oil.....				5.0	5.0
Kerosene.....			7.5	142.1	149.6
Gasoline.....			14.6	175.7	190.3

^a Second half of year.

^b First half of year.

The above table includes the crude oil and products shipped to Curaçao, Dutch West Indies, where there is a large refinery, erected and owned by the Royal Dutch Shell group and handling a large part of the Venezuelan production.

The Caribbean Petroleum Co. has taken special interest in the development of a domestic market in Venezuela for the products of its refinery. In 1919 the company sold in Venezuela, for domestic consumption, a total of 3,318,086 liters of kerosene (1 liter=0.264 gallon), 2,186,271 liters of gasoline, 1,350 liters of mineral turpentine, and 306 liters of benzine. The following prices per metric ton, f. o. b. refinery at San Lorenzo, were quoted for September, 1920 (1 bolivar = \$0.193):

	Bolivars.
Gasoline	1, 130. 5
Kerosene.....	977. 5
Gas oil.....	341. 7
Engine distillate.....	341. 7
Mineral turpentine.....	1, 543. 6
Benzine.....	2, 083. 5
Fuel oil.....	66

The residual fuel oil produced is much too heavy to be used in any internal combustion fuel-oil engine of either true Diesel or semi-Diesel type, containing as it does about 80 per cent asphalt, unless a mixture be made of the fuel oil and the gas oil in order to obtain the right proportion. A domestic market for this is found, however, in the Compañía de Navegación Venezolana, which is now using fuel oil in all its steamers, and in the La Guaira-Caracas Railway, which has also recently adopted this fuel. Gasoline costs 35 cents per gallon at wholesale at the refinery at San Lorenzo, and retails for 34 to 36 bolivars (\$6.56 to \$6.95) per case, in 10-gallon cases, in Caracas and other distributing points in the country.

Besides the refinery at San Lorenzo, this company has erected three storage tanks of 55,000 barrels each at San Lorenzo, another tank at Puerto Cabello of 30,000 barrels capacity, and two at La Guaira of 30,000 barrels each, equipped with the necessary shore lines for pumping direct from barges. These tanks are used for supplying local and coastwise traffic. The company has two seagoing tugs and two 800-ton oil barges in service between these tanks and San Lorenzo.

In 1919 the Caribbean Petroleum Co. paid the Venezuelan Government the following taxes:

	Bolivars.
Minimum tax of exploitation.....	285, 650
Surface tax.....	133, 078
Exploitation tax.....	91, 827
Tax on kerosene (one-half of import duty).....	618, 576
Tax on gasoline (one-half of import duty).....	75, 110
Tax on mineral turpentine.....	260
Tax on benzine.....	10
Total.....	1, 184, 511

The total investment to date of the Caribbean Petroleum Co. in Venezuela, including construction and development work, is well over \$6,000,000 in United States gold.

COLON DEVELOPMENT CO.

The Colon Development Co. is also owned by the Royal Dutch Shell group and the General Asphalt Co., through the Burlington Investment Co. (Ltd.), of London. A one-quarter interest is in the hands of the Carib Syndicate, an American concern. Its holdings comprise 4,500,000 acres in the district of Colon, State of Zulia, on the Rio del Oro, south and southwest of Lake Maracaibo. Under what is known as the Andres Jorge Vigas concession, originally granted January 3, 1907, to be effective for 50 years, this English corporation commenced drilling operations early in 1914. Encounters with roving bands of Motilones Indians at first made geological exploration difficult, and it was found necessary to maintain a force of armed guards at the drilling camps and with the exploring parties. Development was started about 100 miles from the nearest settlement, and, although there are rivers for the transportation of machinery and equipment, it was necessary to spend large sums in delivering material on the ground. The first well was started in the latter part of 1914, but after the company had experienced considerable difficulty with drills and laborers, it was abandoned at a depth of 700 feet. A second well was drilled on the Rio Oro, and oil of light gravity was produced at a depth of 1,000 feet; the initial capacity was said to be about 200 barrels per day.

A total of six wells, ranging in depth from 900 to 1,600 feet, have been drilled by this company in the Rio Oro and Rio Tarra sections; there are at present four producing wells, believed to have a total capacity of 4,000 to 5,000 barrels per day. These four wells have been thoroughly proven and are capped awaiting transportation by pipe line. They produce a high-grade light oil of paraffin base, having a gravity of 36.4° Baumé. Other means of transportation must be provided and the company is now engaged in building roads for that purpose.

VENEZUELAN OIL CONCESSIONS (LTD.).

On February 28, 1907, a contract was granted to Gen. Antonio Aranguren for the development of asphalt in the district of Bolivar, State of Zulia, and on July 18, 1912, a decree was issued by the Government of Venezuela, bestowing upon the concessionaire the additional right to exploit petroleum. Some question has been raised as to the legality of this decree, but notwithstanding protests made by other oil companies, it has been allowed to stand. In the latter part of 1913, after geological investigation, it was transferred to the Venezuelan Oil Concessions (Ltd.), an English corporation, subsidiary to the Royal Dutch Shell group and General Asphalt Co., with the majority of the stock in the hands of the Burlington Investment Co. (Ltd.), of London. The Aranguren concession comprises 7,610 square miles in the district of Maracaibo, on the west side of Lake Maracaibo, and in the district of Bolivar, on the east side of the lake. The concession is to be effective for 50 years from the date of the grant.

Four drillers and an office staff were sent out from London with a field superintendent late in 1913. Two wells were started immediately, one on the shore of Lake Maracaibo, at a point called Santa

Rita, and the other in the swamp just to the south of Santa Rosa, also located on the shore of the lake. Drilling in the Santa Rita well was carried to a depth of 1,600 feet without any trace of oil having been encountered. At Santa Rosa an oil sand of good promise was found at 800 feet, and at 1,500 feet another sand was found which produced oil of about 20° Baumé gravity. Upon the striking of this last sand a great quantity of oil was produced, but 10 days after the strike the production was not more than 10 barrels a day. Apparently no attempt has been made to pump this well, and it seems to have been abandoned. In 1918 and 1919 five more wells were drilled by this company, one on what is known as the Santa Barbara Tract No. 1 in 1918, sunk to a depth of more than 1,400 feet and said to contain oil in commercial quantity. On the tract known as Santa Barbara No. 2, four wells were drilled in 1919, in one of which, No. 4, drilled to a depth of 1,700 feet, oil in commercial quantity was found. The estimated production was 18 tons, or about 119 barrels per day. Both of these proven wells are located in the Bolivar district of the State of Zulia and are capped until better means of transportation can be provided.

BRITISH-CONTROLLED OILFIELDS (LTD.).

On July 22, 1907, there was granted what is known in Venezuela as the Bernabe Planas Concession for development of oil in the district of Buchivacoa in the State of Falcon. After it had been offered for sale for a number of years an option was given in 1913 to a British company, the Venezuelan Falcon Oil Syndicate (Ltd.). After investigations and exploration lasting about one year this company agreed to start development work, which is under way at the present time. The work was retarded at first by considerable sickness among the men in the field, due to the difficulty of keeping them protected from the dangerous malarial mosquito found in this locality. Also, about the middle of 1914 it was realized that the system used in drilling was not suited to conditions, and orders for drilling equipment were placed in the United States. Further operations were hampered by the outbreak of the European War. Although the work has been carried on continually it has been done with a limited force, and no satisfactory results have been obtained. In five out of the seven wells drilled, oil has been found at depths varying from 600 to 1,800 feet and scattered over a considerable area. One well is producing oil at 1,800 feet, but only in small quantities, and it is understood that the company intends to go deeper with it. At least two others give promise of good production. A great deal of preliminary work has been done on this property. Roads have been constructed to the sites of the first wells and dwelling houses for employees have been erected. Drilling is being done in both standard and rotary work.

The territory held by this company covers between 6,000,000 and 7,000,000 acres, and has a large frontage on the Caribbean Sea. In January, 1918, the British-Controlled Oilfields (Ltd.) was formed, being registered in Canada and affiliated with the Anglo-Persian Co., of London. The Venezuelan-Falcon Syndicate was then absorbed by this new company, as was also a firm known as the Bolivar Concessions (Ltd.), which held the principal properties in the States of

Zulia and Falcon now being worked by the British-Controlled Oil-fields (Ltd.). Reports of geologists regarding this tract of 3,000 square miles fronting on the Caribbean Sea show many evidences of the existence of petroleum throughout large areas of the concession. Anticlinal lines exist from northeast to southwest, well defined for a distance of 50 miles, and showing noticeable convex formations. Seepages of oil were found on hilltops bare of vegetation, together with rich oil sands, which lead to the belief that this area contains oil in commercial quantities.

BERMUDEZ CO.

On July 14, 1910, the General Asphalt Co., which owned the large deposits known as Bermudez Lake, obtained a concession for the oil rights in the vicinity of the lake and also on the island of Pedernales and the peninsula of Paria. This concession, originally obtained in 1910 by R. M. Valladares, was transferred to a subsidiary of the asphalt company called the Bermudez Co. Soon after acquiring the right the Bermudez Co. sent a force of 10 geologists over its concession and finally selected 19 areas of 500 hectares each in the vicinity of the asphalt lake, 6 areas on the peninsula of Paria, and 4 areas on the island of Pedernales. The terms of the Bermudez concession called for almost immediate exploitation of all areas selected. By June, 1913, wells were being drilled on all of the 29 areas. On the six areas of the peninsula of Paria wells were sunk deep enough to demonstrate the impossibility of producing oil in commercial quantities, and all of them were abandoned. At Pedernales the company sunk seven wells, ranging in depth from 200 to 1,000 feet, occasionally finding oil, but not in sufficient quantities. In this region the company encountered great difficulty on account of heaving sands, soft mud, and gas pressure, all of which made it necessary for the company to adopt several methods of drilling.

In the Guanoco areas wells have been sunk to varying depths from 200 to 4,200 feet. In some of them heavy oil, almost asphalt, has been found, and always in fair quantities, but too heavy to pump. Two more wells were started in this region in 1916, but as yet no commercial results have been obtained. The company has also done considerable geological work to locate a proper place to drill where it is thought oil will be found, as it is still believed to exist in large quantities in this region. The operations of this company have been extremely difficult because nearly all of the wells in the three regions described are located in swamps, and it has been necessary to lay portable tracks on trestles to transport drilling equipment and materials. The general camp of the company was located at the same place as the headquarters of the General Asphalt Co., where several hundred employees are maintained, but the field camps have been in unhealthful places, and considerable sickness among the men has resulted. The total area retained by this company for oil exploration and drilling work is 4,500 hectares.

PAUJI CONCESSION.

On January 16, 1909, a petroleum concession was granted to Joaquin Briceño on 3 hectares of land adjoining a place known as Pauji,

30 miles east of Lake Maracaibo. This right was doubtless secured on account of the abundant evidences of asphalt seepages, which are numerous in that locality. A company was formed in 1916 in the city of Maracaibo with a large nominal capital, but with only about \$50,000 for actual work. This company is known as the *Compañía Anónima Petrolífera de Minerales del Río Pauji*. Its property now covers about 300 hectares of land located about 22 kilometers (1 kilometer=0.621 mile) southeast of the Mene Grande field of the Caribbean Petroleum Co. The money provided was soon exhausted after a small drill rig had been put on the ground and work started, and an American company has been negotiating for the property recently.

COMPAÑÍA PETROLEA DEL TACHIRA.

The *Compañía Petrolea del Tachira* is the oldest authentic oil concession in Venezuela, having been granted by the State of Tachira in 1884 and ratified by the National Congress. The property lies just south of the mouth of the Rio Catatumbo, and the company has actually been selling petroleum products for a number of years to the surrounding districts. Production is from open seepages and refining by the crudest possible means.

NORTH VENEZUELAN PETROLEUM CO. (LTD.).

The North Venezuelan Petroleum Co. (Ltd.) is a British corporation controlled by the Central Mining & Investment Corporation (Ltd.). It has recently acquired the Francisco Jimenez Arraiz concession, originally granted July 3, 1907, and covering 100 hectares in the districts of Acosta, Zamora, and Silva, State of Falcon.

MARACAIBO OIL EXPLORATION CO.

The Maracaibo Oil Exploration Co. is an American corporation organized in the autumn of 1919. It has made four locations, all in the State of Zulia, the principal locations being in the district of Parija, at Los Barrosos, adjoining Lake Maracaibo. Its holdings total more than 750,000 acres, and options are held on other lands totaling more than 110,000 acres. As under the Venezuelan mining law no one person or company is allowed to hold more than 80,000 hectares or 197,680 acres of land, four subsidiary companies have been formed. They are the Mara Oil Exploration Co., the Miranda Exploration Co., the Paez Exploration Co., and the Parija Exploration Co. These companies have as yet only exploration contracts with the Government. Camps have been established and drilling machinery is due to arrive at Maracaibo.

COLOMBIAN PETROLEUM CO.

The Colombian Petroleum Co. is controlled by Henry L. Doherty, of New York. It holds a concession in the Lake Maracaibo district which consists of 37,500 acres. This company also has a large concession on the Venezuelan-Colombian boundary line (partly in Colombia and partly in territory in dispute between Colombia and Venezuela), which consists of more than 1,000,000 acres and is considered by some to be the most valuable concession in South America.

VENEZUELA OILFIELDS CO. (LTD.).

One of the last companies to enter the Venezuelan field is the Venezuela Oilfields Co. (Ltd.), incorporated early in 1920 in the State of Delaware. This company is owned by the Sun Oil Co., of Philadelphia, which is financed entirely by American capital. It has entered this field on a large scale, and its Venezuelan organization is known as the Andean Sun (Ltd.). It has formed the following 11 subsidiary companies, each having the exploration rights on the maximum allowance of approximately 80,000 hectares: Venezuelan Oilfields Co. (Ltd.); Bolivar Oilfields (Ltd.); Carabobo Oilfields (Ltd.); Escalante Oilfields (Ltd.); Merida Oilfields (Ltd.); San Cristobal Oilfields (Ltd.); Sucre Oilfields (Ltd.); Trujillo Oilfields (Ltd.); Tachira Oilfields (Ltd.); Venezuela Sun (Ltd.); and the Zulia Oilfields (Ltd.).

While this company has some large concessions in the State of Falcon, most of its territory is located at the south end of Lake Maracaibo. It already has in Maracaibo a force of 21 Americans, consisting of geologists, engineers, and office men, who have established themselves and commenced operations. The company has opened offices at Maracaibo and a new camp near Valera, toward Trujillo.

BRITISH EQUATORIAL CORPORATION (LTD.).

Another company which has recently entered this field is the British Equatorial Corporation (Ltd.). This is a company the capital of which is claimed to be approximately 50 per cent American and 50 per cent British. The American interest is owned by the Southern Oil & Transport Corporation, with offices in New York. This corporation has extensive oil interests in Mexico and operates a shipbuilding plant for the construction of tank steamers in the United States. The British capital invested in this undertaking is said to be interested in the Scottish-American Corporation. This organization has purchased outright the rights pertaining to a number of concessions in the Maracaibo district that were originally granted to Venezuelans, and has secured options on several more. In this district it owns and has options on 19 concessions and in the State of Monagas, opposite Trinidad, it has purchased 5 concessions and has an option on 1 more. The concessions that this company will explore in the Maracaibo district are all located on Lake Maracaibo, and as it expects to have a number of tank steamers at its disposal, it should make rapid progress in its development work.

VARIOUS AMERICAN COMPANIES.

Several American companies, other than those mentioned above, have had representatives in Venezuela for several years, and the West India Oil Co. has recently sent a large party of geologists and engineers into the interior districts. Among these other companies may be mentioned the Texas Co., the Gulf Oil & Transport Co., the Sinclair Exploration Co., and the New England Petroleum Co.

OIL LAND NOT UNDER CONCESSION.

Recent developments have been so rapid that it is impossible here to state the amount of oil land in Venezuela not yet covered by con-

cessions. In January, 1920, it was estimated that about 25 per cent of the promising land in the Lake Maracaibo Basin was still open to concession. This meant at that time that there was about 7,000 square miles for which concessions could be applied, but a large part of this has probably been taken up during 1920. There are, however, other sections, such as in the State of Falcon, consisting of 9,000 to 10,000 square miles, as well as some in eastern Venezuela, west of Trinidad, in which as yet little exploration work has been done, and in which concessions could probably be bought. The usual price paid for a concession in a wild and untested region is between \$1 and \$2 a hectare (2.471 acres).

REFINERY AT CURAÇAO.

Of great encouragement to the development of the Venezuelan oil industry has been the construction, previously mentioned, of a large refinery by the Royal Dutch Shell group at Curaçao, Dutch West Indies, 267 miles from Maracaibo. Because of the navigation difficulties encountered in entering the port of Maracaibo it is probable that Curaçao is destined to become the transshipment point for practically all the oil taken out of Venezuela. All the petroleum products produced so far by the Caribbean Petroleum Co., with the exception of that refined at the company's San Lorenzo plant, has been handled at this Curaçao refinery, which has been able to sell bunker oil to passing vessels more cheaply than it can be obtained at either the Panama Canal or New York.

The company owning this refinery is known as the Curaçao Petroleum Co. The refinery was constructed at a cost of over \$2,000,000 and has in its employ more than 1,000 men. It is capable of handling 1,400 barrels of oil per day. New ocean-going tugs and barges are being supplied for the transport service from Venezuela, and large consignments of crude oil are also being received from Mexico.

PETROLEUM LAW OF VENEZUELA.

Present petroleum operations in Venezuela are conducted under the provisions of the latest petroleum and coal law, the "Ley de Minas; Ley sobre Hidrocarburos y Demas Minerales Combustibles," of June 19, 1920. In commenting on this new legislation it may be stated that the outstanding principle is that the Government of Venezuela controls the subsoil, subject to the provisions of the mining law, and all contracts for the exploration and exploitation of coal and petroleum have to be made with the Government through the Ministry of Fomento (Development). The fundamental principles of the law appear to be those of affording a just basis of contract with the Government for the exploitation of these natural resources of the country and of stimulating such development by native and foreign capital. No restrictions are placed on foreign companies other than subjection to the Venezuelan laws and courts in all things concerning the obligations contained in their contracts and the strict prohibition of diplomatic recourse in the same connection. Free right of transfer of contracts and concessions is provided for. All foreign companies must also be legally constituted in Venezuela.

The Government reserves to itself for direct working or future contract with others every alternate section (parcel of 200 hectares)

contracted for exploitation in tracts already held for exploration purposes. In this manner the Government retains one-half of the proven oil-bearing lands of the country for future development, thus insuring reserves for the future. The law also gives to the Executive ample power to regulate, in the future, such reserves or to contract for their exploitation, or to remove lands from entry when desired for national policy. The same law makes special permission of the Federal Executive necessary for the exploration or exploitation of oil or coal lands in the beds of navigable streams, bottom of lakes, or marine islands under the direct control of the Executive.

Owners of old contracts and concessions for coal and petroleum lands are protected by the new law during the terms of their contracts, which are subject to the terms of their agreements then made and the mining laws and regulations in force at the time their contracts were made. Owners of the land are also protected, inasmuch as they are given one year from the date of publication of the new law (June 19, 1920) in which to make declaration of intention to explore for oil or coal or similar substances and secure a contract without payment of the superficial tax otherwise provided. Such land-owners making application for exploration contracts are exempt from the provision limiting the holdings of any one person or company to 80,000 hectares, provided the land in their possession exceeds this amount. After the first year the land can be located for exploration or exploitation purposes by third parties, according to the law.

TAXES—FUTURE OF INDUSTRY.

The taxes as fixed by the new law are as follows:

Exploration tax:

Coal and oil lands.....	0. 75 bolivar per hectare per year.
Oil lands only.....	0. 50 bolivar per hectare per year.
Coal lands only.....	0. 25 bolivar per hectare per year.

Fixed exploitation tax:

Coal and oil lands.....	2, 000 bolivars per parcel of 200 hectares.
Coal or oil lands.....	1, 000 bolivars per parcel of 200 hectares.

(The above exploitation tax is a fixed superficial tax, paid but once.)

Annual exploitation tax:

Coal and oil lands.....	1, 400 bolivars per parcel per year.
Oil lands only.....	1, 000 bolivars per parcel per year.
Coal lands only.....	400 bolivars per parcel per year.

Production tax—15 per cent of the raw product in cash value or specie.

Refinery tax—One-half of estimated import duties on products sold in the country for domestic consumption.

The effect of the new law and taxation therein provided for will be that oil or coal lands can not be held indefinitely as reserves by any large company willing to pay the surface taxes to hold the ground for possible future operations, because the lands contracted for must be explored within a fixed period of time. Exploitation operations must also begin within a fixed time thereafter and continue without interruption unless justifiable reasons for not doing so are shown. The Government is also assured an income from the activities of the oil companies and receives, eventually, the benefit of all exploration and development work done on properties adjacent to reserves held by the nation: The attitude of the Government may be said to be that of protection of the national interests—at the same time pro-

viding an equitable medium of exploitation and stimulation of the industry.

Total investment to date in Venezuelan oil exploration and drilling work is estimated at \$50,000,000, and as yet the industry may be said to be in its infancy so far as contribution to the world's supply of oil is concerned. Recent developments, particularly by American companies, have taken on vast proportions, and it is estimated that within the next five years approximately \$30,000,000 will be expended by them in Venezuela. The oil companies have generally accepted the new legislation as favorable and are proceeding with their work on that basis, and it may be predicted that the next 10 years will see still greater development than the past 20 years in Venezuela. It is too early to predict that the northern coast of Venezuela will rival the Tampico fields of Mexico, but drilling operations in Falcon and the far western part of Zulia during the next few years will go far toward fixing Venezuela's status as an oil-producing country.

[NOTE.—Copies of the translation of the Venezuelan coal and petroleum law are available for distribution and can be secured upon application to the Bureau of Foreign and Domestic Commerce, or its district or cooperative offices. Refer to file No. 43914.]

LIVE STOCK AND CATTLE RAISING.

SURVEY OF DEVELOPMENT.

Cattle raising may be termed one of the basic industries of Venezuela, horned cattle having been introduced by the Spaniards from Andalusia during early colonial times. In 1804 there existed in the country 1,200,000 head of beef cattle, but during the wars of independence and the subsequent internal disturbances this number was reduced to 256,000. In 1901 there were about 2,000,000 head in all parts of the country, and the number was estimated in 1920 at 2,600,000. Requiring a minimum of labor, the industry received much more attention formerly than other industries of the country, but was conducted in a more or less haphazard manner, little attention being paid to modern breeding methods or to the care of the stock. There are about 1,300 cattle owners in Venezuela, and the total investment may be said to reach approximately \$22,000,000.

Two former Presidents of Venezuela, Guzman Blanco and Crespo, were the first to undertake the improvement of the industry on a large scale, and their efforts are being carried on by Gen. Gomez; he and his associates are to-day the largest stock owners of the country and practically control the industry. Gen. Gomez is very much interested in solving the problem of crossbreeding to produce the best acclimated breed for the country, and his lead is being followed by a group of cattle owners, with the result that considerable improvement in both breeding and pasturage has been obtained already. A considerable number of pure-blood animals have been imported from time to time by the larger owners, and very good half-blood stock can now be purchased in the country for breeding up native stock in the more outlying districts of the industry.

CATTLE-RAISING AREAS OF THE COUNTRY.

On account of the enormous areas of open, level land in Venezuela, covering one-third of the total area of the Republic and containing 120,000 square miles, cattle farming has been regarded as potentially the preeminent industry of the country and capable of great development, it being said by various writers that the plains of Venezuela can support 50,000,000 head of beef cattle. Such a statement may be true as regards the actual area of level and accessible land, but there are other factors and difficulties that make such a realization extremely improbable for many years to come. Generally speaking, these factors have to do with the climatic conditions prevailing throughout the cattle country and with the peculiar conditions affecting the supply of natural grasses on the great plains. There is not sufficient feed for the stock during the entire year, there being really only two good feeding seasons on the plains—both of short duration. Also, this is not a short-grass country, the natural grasses being of a large, coarse, hard kind, which the stock can not eat when burned dry by the hot sun and winds during more than half of the year.

While stock farming is more or less general all over the country—horned cattle being found in all sections except the more arid lands of the States of Lara and Falcon, the higher reaches of the Andes, and the low, swampy, hot lands of the Lake Maracaibo Basin and the Delta Amacuro—the cattle country proper stretches from the border of the delta of the Orinoco (the Vagré River being the dividing line), in the extreme eastern portion, to the line of the Western, or Venezuelan, Andes in the west, and again southwest to the Casanare River country in Colombia.

For all practical purposes to-day the cattle country proper may be said to extend from the inland division of the Caribbean Coast Range south to the line of the Orinoco, a distance of approximately 200 miles, the length being about 600 miles from the line of the Andes to the delta of the Orinoco.

Cattle range, equal or superior to the "llanos," as this area is called, is found in several places south of the Orinoco where the land is higher in elevation and free from the annual floods of the lower llanos north of the river. The average elevation above sea level of the great plains north of the river is 650 feet, while to the south the range is about 1,000 feet above sea level. However, these areas are not developed, with the exception of a few ranches in the region of Cuchiveros and Caicara, lying south of the Orinoco.

Between the coast ranges of Caracas and Barcelona the llanos reach the sea for a considerable distance, but this area adjacent to the sea has not been developed or used as a natural outlet except at the Port of Guanta, which ships cattle brought in overland from the district of Maturin. The other outlet to the sea is by way of Maracay, via San Juan de Los Morros and Villa Cura, thence to Valencia, and then through the pass of the Coast Range to Puerto Cabello.

In appearance the llanos resemble great grass plains, in many places stretching away to the horizon, but here and there in the central part, broken by higher mesas or low plateaus, beginning in the west with the mesa of Santa Clara, north of Caicara, and extending in a continuous series eastward and northward to form the watershed between the Orinoco and the Unare-Aragua Basin, which drains into the Caribbean west of Barcelona. The lowest part of the llanos is found to the west of this chain of table-lands, in the valley of the Portuguesa, the lower part of which has large tracts not over 300 feet above sea level.

CLIMATE OF THE LLANOS.

While severe drought is experienced over the entire area of these plains during the winter months, the heavy rains, particularly in the western regions, produce floods over the low-lying plains, the mesas being dry at all times. The whole area is traversed by numerous streams, more or less dry in the dry season, but forming swamps and flooded areas during and immediately following the rainy season, when the cattle take refuge on the "islands," called "bancos," and the higher elevations, the "mesas." These plains are neither prairie nor desert, but hold rather an intermediate position, varying toward one or the other according to the season of the year.

In the extreme western part of the plains the rains begin at times in late April, and continue until October. The usual rainy season is about one month later in the eastern part. The precipitation varies greatly with the year, but may be said to average about 40 inches for the entire year, although certain areas in the west receive probably 60 inches of rain, the character of the topography being such that this amount is sufficient to allow the water of the main rivers to back up into the tributaries and flood vast areas. It is probable that during the latter part of a heavy rainy season more than a third of the entire area is under water to a greater or less depth. These flooded areas have every appearance of swamps, being soon covered with a rank vegetation and water-plant growth, inhabited by crocodiles, alligators, snakes, fish, and fowl.

The other most important factor of the climate of the llanos is that of the trade wind, which blows across from east to west, lessening the terrible heat of the plains during the day in the eastern part nearer the sea. The best part of the llanos, so far as climatic conditions are concerned, lie around (but more especially to the west of) Maturin, in the State of Monagas.

It is hard to understand that the lack of water is one of the chief difficulties encountered in stock farming, or even travel in the llanos. In the wet season there is of course plenty of water, but during the dry season the streams and swamps soon dry up and the stock have to travel great distances to get enough water to drink. The soil is generally very shallow and sandy, the higher mesas being covered with gravel, and the moisture is not held.

FEED FOR THE CATTLE—NATURAL GRASSES, ETC.

As has been said, the great cattle plains of Venezuela are not a short-grass country, the natural grasses being very large, coarse, and hard when dry, and growing in bunches. The cattle feed readily only on the green shoots at the beginning of the rainy season, during the period before the lower areas become flooded, and during the latter part of the rainy season or the beginning of the dry season, before the hot winds and sun have parched the plains, making the grass too coarse and hard for the cattle to eat. During the height of the wet season the cattle are forced to move from one high area to another, often wading through long distances of swampy land to reach these places of refuge, where the feed is soon exhausted and the cattle begin to suffer. As the waters recede the cattle follow the drying margins of the flooded areas, eating the still green shoots left there, and this is one of the most prolific causes of disease among the stock on account of the fact that the flooded areas, covered with aquatic growth, soon become foul. Only during two short periods of the year do the cattle get enough grass to eat, and the content of even this feed is mostly water.

GENERAL CONDITIONS.

In review it may be stated that the chief difficulties of stock raising on the llanos of Venezuela are the lack of sufficient grass for pasturage all the year round and the lack of water in the dry season of the year, combined with the extremely hot climate and its attendant ills.

Disease epidemics among the stock are of rather frequent occurrence, and the ticks are bad during the rainy season.

The llanos are for the most part uninhabited, except for the few small towns and villages in the western half, and labor is very scarce and hard to secure, even for stock-farming work. Horses are few in number and of very poor grade, and even mules do not stand the climate well and are worth twice and three times as much as in the Caracas region. Most of the ranch work, such as looking after the stock, driving, etc., is performed by "peons" on foot—not mounted, as is customary in the United States, because the mounts are too scarce and expensive as a rule, especially in the southern part of the plains. A mounted cowboy receives a wage of 12 bolivars (\$2.32) per day (mount included), a large amount when it is considered that the average wage paid a farm hand in the Valencia farming country is only 3 bolivars (\$0.58) per day. Labor can not be readily attracted to the plains on account of the climatic conditions, as the men soon succumb to the malaria so prevalent throughout this region.

The problem of feed is being worked out by means of pastures of planted grass, such as the Para and guinea, located at the edge of the plains, near Maracay and Valencia, where the cattle from the llanos are brought in by easy stages across the plains and held for conditioning before being sent either to the packing house at Puerto Cabello, to the Caracas market, or to the ports of Guanta or Puerto Cabello for export on the hoof. This development is being continued in the region of San Carlos southwest of Valencia, and its adoption is being considered by the British cattle company which recently invested heavily in Venezuelan cattle lands, since it had been found that there was not sufficient natural pasturage to support the cattle properly throughout the year. The lack of pasturage in the llanos proper means that it takes months to drive stock across the plains to the market outlet near the coast, and any undertaking to develop the industry on a large scale would necessitate the provision of chains of artificial pastures over the route to the coast from the interior, in which the cattle could be held in easy stages as they came along.

Gen. Gomez and his friends and associates have gradually acquired the suitable lands in and around Valencia and Maracay, and thereby control the outlet to the market centers by reason of owning the holding ground for conditioning the stock brought in from the plains farther to the south. These interests also plan the erection of a new packing house at the harbor of Ocumare de la Costa or Turiamo Bay; these places lie east of Puerto Cabello and just to the north of Maracay, with which they are connected by a road over the pass of the Coast Range. Plans include the construction of an electric railway over this route. The investment in these holding and conditioning pastures reaches about \$1,000,000 to date, and the amount is being rapidly augmented.

EXPORTS OF CATTLE FROM VENEZUELA.

Exports of live beef cattle from Venezuela started in 1831, when 1,825 head were sent to Cuba and other islands of the West Indies. The number gradually increased until in 1901 a total of 60,000 head were exported, but this number includes all kinds. Exports of beef cattle in 1915 were 18,339 head, valued at 1,499,000 bolivars

(\$289,307); about the same number were shipped in 1916 and 1917, but in 1918 there was an increase to 19,020 head, valued at 1,540,000 bolivars (\$297,220). Frozen meat products of the Puerto Cabello packing house took about the same number of head from 1915 until the packing plant was shut down in 1920.

(For further details of cattle, prices paid, exports by ports and destination, the packing house at Puerto Cabello, etc., the reader is referred to the reports on the Caracas and the Puerto Cabello and Valencia commercial districts.)

FOREIGN INVESTMENT IN CATTLE IN VENEZUELA.

Suitable cattle lands are no longer open for location under the Government public-land provisions, as all of the accessible and well-located areas have long been taken up by natives. A number of the titles to the largest ranches come down from the old Spanish land grants and are held by the old families of the country. To acquire suitable cattle lands in Venezuela, purchases would have to be made from the present owners.

In 1917 the Venezuela Meat Products Syndicate (Ltd.), of London, purchased various tracts of cattle lands in Venezuela, principally in and around the district of San Fernando de Apure, far to the south of Valencia (the distance is more than 200 miles overland), and totaling approximately 3,456,000 acres. Previous purchases of cattle lands totaled about 576,000 acres. The total investment was about \$5,000,000. When an attempt was made later to secure lands for holding pasturage near the outlet of the llanos, purchases of 250,000 acres were declared void by the Venezuelan Government and the money paid in advance was ordered to be returned to the company. The headquarters of the company (that is, of the land administration) is at San Fernando de Apure. The property is so vast that it is said that employees of the company have never inspected all of it and that the area contains many miles of land unknown to the white man.

The development of this vast territory in cattle involves the stocking of the range with native and crossbred cattle, the establishment of dipping pens and range quarters, the creation of artificial pasturage on a large scale, the provision of water supplies for the dry season away from the permanent streams, and last, but not least, the development of a chain of large pastures leading to the coast or the packing house. Labor will have to be imported, and the cost of 1 acre of developed and fenced Para or guinea grass can be reckoned at about \$20. The company faces a huge investment to make its lands practical for cattle raising on a large scale.

It is thought that the high bench lands which lie along the southern bank of the Orinoco above Ciudad Bolivar and the northeastern part of the llanos in the State of Monagas offer the best opportunities for cattle raising now left open for foreign investment. A packing house or refrigeration plant has been advocated for Barrancas, where the river would serve as the means of transportation from the ranges. Ocean steamers of 1,500 tons burden can come up the Orinoco as far as Barrancas during the entire year. Such a proposition might be best worked out in combination with some practical scheme of colonization.

VENEZUELAN SALTED MEAT IN TRINIDAD.

In meeting the cost-of-living problem, Consul Henry D. Baker says, the people of Trinidad find considerable relief in the plentiful supplies of cattle on the llanos of the neighboring country of Venezuela. The retail price of fresh beef or veal in the local market is 18 cents per pound, which is not over 2 or 3 cents higher per pound than the pre-war price. Such fresh meat is obtained from Venezuelan cattle brought to Trinidad by boat and slaughtered at the abattoir in Port of Spain. But while this meat is cheap, it has the disadvantage of being taken from cattle that reach Trinidad from Venezuela in poor condition after the voyage, and in still poorer condition after the animals have been in local quarantine for two weeks. Moreover, the meat is usually very tough, being eaten quickly after slaughter.

An interesting new method, however, has been put into effect for providing the people of Trinidad with meat from Venezuela, taken from cattle slaughtered under sanitary conditions before leaving that country and while in superior condition, and boning and salting the meat, and packing in such a way that it reaches Trinidad still full of fat and juice, and in a most tender and palatable condition, so that it meets with a very quick and ready sale at 16 cents per pound. This is 2 cents per pound less than the price for fresh meat, but the real economy is very much greater, as the weight per pound represents all solid meat, whereas the fresh meat sold in the local markets contains a large proportion of bone and other wastes. The large estates in Trinidad are especially anxious to get this meat, as it keeps, under conditions of rural transit and tropical heat, much better than the ordinary fresh meat from Port of Spain.

This successful experiment with the salted meat from Venezuela originated, Consul Baker says, with a prominent merchant of Port of Spain, Trinidad, who for some time made a careful study of the Venezuelan cattle and meat trade, and made arrangements at Maturin, near the coast of the Venezuelan side of the Gulf of Paria, for slaughtering cattle and preparing the beef for shipment to Trinidad.

Only oxen are at present used for this purpose. They are brought from the llanos into large savannah inclosures about 1 mile from Maturin, are pastured on luxuriant grass until they weigh 1,000 pounds or over, and are then slaughtered. The carcasses are then cut into four quarters, temporarily salted, and taken to another department where they are hung on iron bars and allowed to drip. The heads are taken off and sold at 40 cents apiece to local inhabitants. The day following the killing and overnight dripping, the meat is cut away in slices from the bones. These bones are sold on the spot to local peasants for 6 cents per pound. The heavy side portions of fat are also removed and sold to a local soap factory for 12 cents per pound. The hides are shipped to Port of Spain, where they are sold to local tanneries and bring 25 to 26 cents per pound.

The meat, after having been sliced from the bones the morning after the killing, is thoroughly salted—about 25 bags of salt, each weighing about 100 pounds, being used on the meat portions of about every 30 oxen slaughtered. The meat is then bagged (100 pounds each) and shipped by boat down the Guanipa River to Cano Colorado, on the Gulf of Paria, where it is transshipped to a small 12-ton sloop which takes it to Port of Spain after a voyage of two and one-

half days, or about four days from the time it is first salted. The sloop which takes the meat to Port of Spain has a specially constructed tank in which the beef is packed so as to preserve its juiciness and substance. The beef arrives at Port of Spain practically fresh, but is resalted after arrival and is then in a condition so that it can be readily preserved for several months.

Some of the meat thus brought to Port of Spain is put into barrels and pickled, following as closely as possible the American process, the beef thus pickled presenting a fine appearance even after three months. It sells for 18 cents per pound locally or for \$18 for 100-pound barrel. Ox tongues are especially pickled and sell for 20 cents per pound.

The salted beef, prepared as described, seems to preserve quite remarkably the juices and flavor of the beef and is very tender. It is made into many attractive local dishes aside from simply being served as a "piece de resistance" meat dish. A favorite method of using it is to wash, boil, and shred it, and mix it with eggs, making a dish called "tortilla," which is very popular, especially with Venezuelan people. It is also much used with soup.

The average price of live oxen in Venezuela is $4\frac{1}{2}$ cents per pound, or \$47.50 apiece for each ox of about 1,000 pounds. Each ox gives about 400 pounds of boneless meat, sold in Port of Spain for 16 cents per pound in the salted state in which it arrives.

It seems likely that the business may rapidly extend, and it is already considered possible that trial shipments of this beef may be made to New York to compete with high-priced American beef.

It seems rather surprising that the enormous llanos of Venezuela, with their tremendous facilities for the grazing of cattle, have thus far contributed only in a comparatively small way to the meat supply of the world.

FISHING INDUSTRY.

The fishing industry of the north coast of Venezuela, in the neighborhood of the Margarita group of islands, is undoubtedly capable of large development by the application of modern methods. Sardines, "tuna" fish, mackerel, herring, and codfish run in season between the islands and the mainland through a channel, which is reported to be a series of banks. Several years ago a concession was granted by the Government to a group of Venezuelans, but this contract has now expired and the Government is well disposed toward granting another concession to responsible and capable people who can develop the industry on a large scale.

Conditions for the enterprise on Margarita Island are excellent—including favorable climate, good harbors, plenty of small boats, and an abundance of cheap labor. There is no question about the quantity of fish available, and the people of the islands are good workers and expert boatmen and fishermen. The fish run as far east as Carupano; this port and Cumana could be made into "collection ports." The market for the product, whether cured, dried, or canned, is right at hand in the West Indies. Several years ago, while the concession was still in force, the banks were investigated by an American fisherman from the Atlantic coast of the United States, and the findings were so favorable that a site was secured from the local government for a plant, but later the terms of the concessionaires were found to be so exorbitant that they were not met.

It is understood that the local government (State of Nueva Esparta) will cooperate with any such enterprise and lend every assistance.

The fishing industry of the northern coast of Venezuela is the subject of a report by the consul of Colombia at Carupano, published in the *Diario Oficial*, from which the following abstract is taken:

In the island of Margarita and along the Venezuelan coast from Cumana to Carupano the chief industry is fishing, salting the catch, and drying it in the sun. The dried fish from this region is consumed in the interior of Venezuela, while the coast people use the fresh fish that is found in abundance at their doors. The fish establishments consist of closed buildings for the storing of salt, tools, and foodstuffs, with quarters for the workers and their families, and open constructions for the manipulation of nets, boats, oars, and fish. The boats are of all sizes, ranging from the small craft handled by one man to the large ones where 50 or more men are employed.

The boats used chiefly are those called skiffs (*esquifes*) constructed for rapid movement, as their special purpose is to carry the nets for catching the fish. Indian rowboats are also used in this industry. The boat is given a circular rotation in order to submerge it in the sea and to take it out quickly. The nets are of different forms and

weaves, according to the size of the fish caught, those for catching small fish having fine mesh while those for large fish have a coarse mesh, permitting the escape of the small fish. The fish most commonly caught in Venezuelan waters are dog fish, saw fish, anchovies, shad, sardines, and similar species.

The fishermen have one of their number act as watchman, and from his position in a high tower or mast of a boat he watches for the approach of shoals of fish. From this height the sea is very transparent and of a uniform color, across which the fish form a dark, cloudy, moving mass. The watchman knows by the movement what kind of fish is approaching, and if he estimates the number as sufficient to justify a catch he gives notice to the waiting men, who throw their boats into the water and launch their nets. One end of the net or seine is fastened to a strongly planted post, to which the net is returned after it has made a circuit. The fish, finding themselves caught in the net, swim in the opposite direction, which brings them to shore and in this way they assist in the operation of the seine. When the boat is taken to shore a group of men is ready to haul in the net, 20 to 100 workmen being necessary, according to the quantity and the kind of fish.

When the catch is large and is composed of two or three kinds of fish, the shore edge of the seine has a small-mesh net attached to prevent the escape of the fish that overflow the large net.

The prices of fish at the establishment vary according to the purchasing power of the customers, and also according to the abundance of the article. The unit of weight in general use is the arroba, equal to 11.50 kilos (25.3 pounds). In favorable seasons this quantity is worth from \$0.80 to \$1.20 for the inferior grade of fish. The best grade sells at \$1.20 to \$1.60 and the others at intermediate prices. In unfavorable seasons, however, these prices are nearly doubled.

The personnel of the establishment attends to all the details of making and mending boats and nets, as well as catching, cleaning, and drying the fish. Wages vary from \$20 per month for foremen and watchmen to \$10 or \$8 for other men, and \$4, \$2, or even less for boys. This is in addition to their food, which consists of fresh fish and corn bread or mush or bread made of bitter cassava or manioc. The workman usually employed is the criollo or guaiqueri, who is very frugal and very strong.

MANUFACTURING.

The chief manufacturing industry in Venezuela is that of the cotton factories, of which there are three in Caracas, two in Valencia, one in Maracaibo, and one in Cumana. These factories use annually 43,000 hundredweight of raw ginned cotton and produce about 50 per cent of the rough common cloth used in the country. The total investment is over \$2,000,000.

Carriages and carts are made in the country in the various principal cities, the metal fittings and upholstery material being imported, however.

Next to the cotton mills, the most important manufacturing industry is that of cigarette making, Caracas having three large tobacco factories which supply practically the whole country. Native tobacco is used exclusively.

There are three large breweries in Venezuela—that of Caracas, with a capacity of 30,000 hectoliters (1 hectoliter=26.42 gallons) a year; that of Maiquetia (La Guaira); and that of Maracaibo, which supplies the western part of the country tributary to the Maracaibo Basin.

Two factories making other goods compete directly with the imported articles. These are the paper factory at Maracay, which uses domestic raw material (a species of coarse grass that grows in the neighborhood), and the paper factory at Caracas, called the *Fábrica Nacional de Papel*. The factory at Maracay is the largest. Both plants turn out coarse and fine wrapping paper for the domestic market.

The modern dairy plant at Maracay is turning out an average of 300,000 pounds of butter a year, the product being sold fresh in the Caracas and Valencia markets and also tinned for shipment to more distant parts of the country. The plant is also equipped for cheese making and condensed-milk manufacture, and it has its own can-making shop.

Practically all of the shoes worn in Venezuela are made in the great number of small local shops in the various towns and cities, the fine leathers and findings being imported from the United States, though native sole leather is invariably used. One modern tannery connected with the Telares de Carabobo cotton factory in Valencia is turning out a fine grade of upper leathers from calf and goat skins. There are a number of tanneries scattered throughout the country and supplying the needs of the population for sole leather for the shoes made locally and for the much-used native "alpargata," or sandal, which has a leather sole.

All the cheap grades of toilet soap, laundry soap, etc., are made in Venezuela by the many soap factories which use the domestic cottonseed oil, coconut oil, etc., produced in the country—the chemicals and dyes used being imported since the war from the United States, though Germany formerly supplied the largest portion of

these articles used in soap making. The soap factories also turn out candles for domestic consumption. A good many of the soap factories which heretofore have paid attention only to the cheaper and coarser grades of laundry soap are now making fair grades of perfumed toilet soaps, which are beginning to compete with the imported brands long known and used in the country.

Nearly all the furniture used is made in the country in the small shops which can be found in every city and large town. Domestic hardwoods and cedar are used by the native artisans, but upholstery materials are imported.

Flat glass is imported, but a local factory in Caracas is making table glassware, crockery, and porcelain ware for domestic consumption and is competing with the imported articles.

Chocolate is manufactured in the country, the largest factory, in Caracas, having a capacity of 25,000 kilos a year (1 kilo=2.2046 pounds). Venezuelan sweet chocolate is very good and compares favorably with the best imported articles.

The cordage factory of Caracas produces sisal rope at the rate of 13.8 metric tons per month (1 metric ton=2,205 pounds), the total consumption of the country being about 23 tons a year. The principal imports of cordage consist of rigging rope at the seaports and twine, etc., for wrapping purposes. The Caracas company (Fábrica Nacional de Fibras y Cordeles) produces rope from the native sisal fiber at an average cost of 20 bolivars (\$3.86) per 100 pounds. The price of rope in the United States under normal conditions is about 7 cents per pound; therefore the Venezuelan industry can successfully compete with the imported article at a wide margin of profit, because the local price is based on the cost of imported rope laid down, duty paid, at port of entry. The company has a plantation of 200,000 sisal plants near Guacara, in the State of Carabobo, the leaves being cut the third year, instead of the fourth year as in Mexico.

The manufacture of matches is a Government monopoly, the exclusive concession being held by the National Match Factory located in Caracas—a British corporation, which supplies the whole country. All materials are imported from the United States since the war.

The Venezuelan tariff is highly protective, and under it the domestic factories can operate at a profit in competition with foreign-made, imported articles, despite the fact that all machinery and equipment and most of the raw materials have to be imported at great expense. There are certain articles, such as salt, matches, shoes, ready-made clothing, laundry soap, imitation butter, coconut oil, etc., the importation of which is either forbidden or so heavily taxed as to be commercially impossible.

Prices for domestic consumption are always based on the cost of the imported article, including first cost in the United States or Europe, commissions, freight, import duty, and profit to the importer.

During the war years, when goods were scarce and prices very high, all domestic manufacturing plants reaped rich profits, and there was considerable expansion and new investment of capital in manufacturing plants. Two new cotton mills were started, one new



FIG. 6.—INTERIOR OF PAPER MILL, MARACAY.

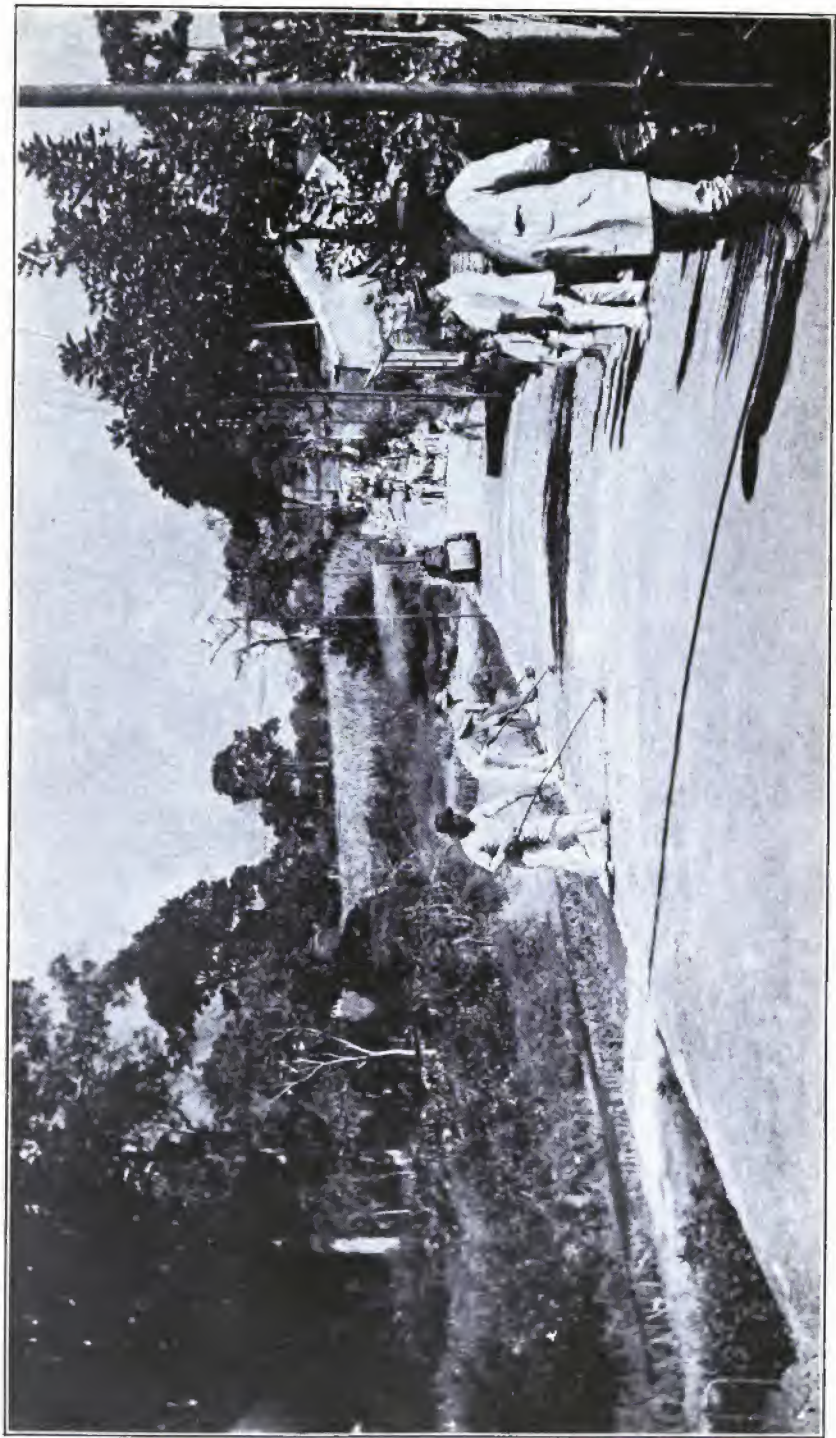


FIG. 7.—CARACAS-VALENCIA HIGHWAY: MACADAM WORK NEAR CARACAS.

paper factory, and the glass factory. The stock of these and the old companies increased greatly in value, and there was considerable market speculation in these securities. However, the drop in prices toward the latter part of 1920 brought about a decrease in the value of these securities, and domestic plants had to cut prices in accordance with the new price levels of imported goods.

There is a real lack of capital in the country for manufacturing, labor is inefficient and untrained, there is a lack of technical and practical skill, raw materials are taxed, and fuel is expensive, as well as electric power, although this latter is capable of great development. And last, but not least, the market is a limited one, the purchasing power of the people being very low. In view of the economic situation that followed the period of readjustment in 1920, it is very doubtful whether there will be any great expansion in manufacturing for several years to come.

With respect to the development of new raw materials which involve agricultural labor, such as the production of jute for bagging, etc., there is not a sufficient surplus of cheap labor in the country districts; labor is being attracted more and more to the larger towns and cities, preferring the living conditions there. There undoubtedly exists an opportunity for foreign capital commanding the required technical and practical knowledge for the manufacture of fine leathers for shoe making, shirts and collars for men's wear, and a good line of toilet soaps, face powders, and other toilet articles. Considerable difficulty has always been encountered in the introduction on the market of any new domestic article on account of the long acquaintance of the people with imported goods, which they have come to know and recognize by the brands and names. Frequent poor imitations of many well-known brands have also contributed to the distrust of home-made goods.

(For details of factories and manufacturing, see district reports beginning on p. 118.)

CARACAS AND COMMERCIAL DISTRICT.

GENERAL CONSIDERATIONS.

Caracas, the national capital of Venezuela, is also the financial and commercial center of the country, although Maracaibo, the commercial center of the western part of the country comprising the Lake Maracaibo Basin and the Andean region, competes with Caracas in the volume of annual trade. In Caracas are located the main offices of the national and foreign banks and the largest commercial houses, many of which maintain branches in the principal business centers of the Venezuelan States. Wholesaling importers of Caracas cover the entire country by means of their system of branch offices, stores, and traveling salesmen, and, by shipping overland, even compete with Ciudad Bolivar for the river trade and with the importers of Maracaibo for the business of the Andean region in such centers as San Cristobal, Trujillo, and Merida.

Venezuela is divided into three main commercial districts, namely, the Caracas district, which takes in the center of the country; Maracaibo, which comprises the Lake Maracaibo Basin and the western Andean region; and Ciudad Bolivar, which controls the trade of the great Lower Orinoco Valley and the Delta region. Valencia, the center of a rich agricultural region, imports directly through Puerto Cabello to some extent, but is tributary to Caracas in great measure on account of capital and credits and the business system long established.

CITY OF CARACAS.

LOCATION—PHYSIOGRAPHY OF SURROUNDING COUNTRY.

The city of Caracas occupies the southern slope of the hills reaching down to the Rio Guaira, which runs approximately east and west between the two divisions of the Central Coast Range. The region around Caracas, lying between the divisions of this range, consists of more or less uniform hills, with many small valleys (which follow the general direction of river and mountains, east and west), and is fairly well populated and intensively cultivated in coffee, cacao, and domestic produce for the Caracas market. Although Caracas itself has an altitude of 3,036 feet above sea level, the pass over the range between this city and the port of La Guaira reaches at one point the height of 3,412 feet, while the main range averages about 5,000 feet and the "Silla de Caracas," a peak near the capital, is 8,643 feet high. Because of the mountainous region around Caracas, the distance from the city to the port of La Guaira, which is about 9 miles by air line, lengthens out to 21 miles by the highway and to 23 by rail. About 50 miles south of Caracas, however, after one leaves the southern line of the Coast Range, the great llanos, or plains, begin and stretch away for 200 miles to the Apure and Orinoco Rivers.

AREA AND POPULATION.

The Federal District in which the capital is located has an area of 1,930 square kilometers (1 square kilometer=0.386 square mile) and had a population of 136,648 in 1917, giving a density of 70.2 per square kilometer. Of this total the city of Caracas proper has at least 75,000 people, with about 91,000 for the "municipality"—that is, including Caracas and its environs, which contain many small villages and towns of more or less importance.

CLIMATE.

Generally speaking, the climate of Caracas may be said to be semi-tropical. Between April and October—locally called "invierno," or winter—which is also the period of the rainy season, the heat is oppressive during the day from 10 a. m. until 4 p. m. and there is considerable humidity in the atmosphere. There is little variation in temperature between day and night, but the nights are often very damp, because of the low clouds that hang on the mountain slopes during the rainy season, as well as the wet lands of the valley at the edge of the city. In November the heat moderates, and in the months from December to March the climate is dry and cooler and very delightful, although many foreign residents find it enervating on account of the lack of change. The maximum temperature for the year is 84.2° F., and the minimum, 55.4°, giving an average temperature of 66.2° F. The annual rainfall, of approximately 32 inches, is precipitated during the months from June to the last of October, the heaviest rains occurring in September. The clothing worn consists mostly of drills and Palm Beach or other kinds of tropical wear, although light woolen clothing is usually worn during the evening by the people of the wealthier class.

ATTRACTIVE APPEARANCE OF CITY—CHARACTER OF BUILDINGS.

To the traveler Caracas presents a very attractive appearance; the location is picturesque, with the mountains behind the city, the green valley lying in undulating contours in front of it, and then the distant southern range beyond. The city is well laid out, and all main streets are paved with concrete and kept clean. The architecture, of course, is Spanish-American, but reinforced concrete is being used to an increasing extent for the construction of buildings. On account of the danger of earthquakes, there are no high buildings, the highest being of four stories. With few exceptions, all buildings are plastered with cement or lime stucco on the outside over the brick, some being given a coat of oil paint instead of calcimine. There are many fine public buildings and small parks throughout the city, and on the outskirts the famous "Paraiso" drive is lined with the fine residences of the wealthy.

SANITARY MEASURES INSTITUTED.

During the administration of Gen. Juan Vicente Gomez, President elect of Venezuela, great progress has been made in sanitation in the capital under the able direction of Dr. L. G. Chacín Itriago, director of the Sanidad Nacional. The old sanitary law of 1913 was repealed

on June 23, 1919, and the new law provided for the organization of the National Sanitary Service. New sanitary laws have provided for the construction of modern houses for the people of the poorer classes, inspection of all private residences, administration of drugs, medicines, etc., offered for public sale, and inspection of the milk supply, public markets, etc., using modern laboratory methods, which are being consistently carried out. Plumbing and drainage arrangements are looked after. Old insanitary houses are condemned and the owners are forced to remodel them in accordance with the new regulations providing for cement floors, modern plumbing, and other sanitary improvements.

Household refuse is removed daily by covered motor trucks with metal bodies, and heavy fines are imposed for collections of garbage, dirt, or other filth in the houses or streets. All water tanks in the houses must be kept covered to prevent the propagation of mosquitoes. Every residence is inspected periodically by an organized force of inspectors from the Sanitary Service Bureau. More than 200 men are employed in Caracas alone on this work, and the organization is being extended to the other large cities of the country. Modern appliances for disinfection are on hand in Caracas. A campaign of popular education in sanitation has been started, a "Swat the fly" propaganda was carried out in 1920, and flytraps and formulated milk were distributed gratis to the people of the poorer classes in Caracas.

PUBLIC WATER SUPPLY—SEWERAGE SYSTEM.

The principal public water supply is derived from the River Macarao at a point about 15 miles west of the town and is carried in by an aqueduct to the reservoir on "El Calvario" hill, overlooking the city, where there are arrangements for filtration, etc. Two other small reservoirs north of the city supply water to the upper part of the town and the suburb known as "Los Chorrros." This water is obtained from small streams coming down from the slopes of the Coast Range. Recently the Sanitary Service has been engaged in cleaning out these reservoirs and putting all in condition. The River Macarao aqueduct, of old construction, is being replaced by modern cement piping and a new water supply developed for Caracas, because the present supply is not sufficient to provide water for the city at all times of the day from the pipes, and houses have to be equipped with tanks and built-in cisterns to collect sufficient water during the night for the day's domestic use. High tanks have to be provided in each house for baths and toilets. Although measures have been taken to prevent contamination of the sources of water supply for the city, the water of Caracas has had a bad name in the past, and foreigners are always cautioned not to use it for drinking purposes on account of the danger of typhoid and other diseases. An English company, the Venezuelan Potable Water Co. of Caracas, supplies filtered water in 5-gallon bottles such as are used for filters in the United States, and this water is mostly used for drinking purposes in the leading hotels, pensions, residences of the better class, clubs, etc.

The entire aqueduct, which formerly consisted mostly of an open ditch from the River Macarao, has been replaced by a concrete-covered

12

- ## Los Testigos



ditch with steel tube siphons in the depressions, etc., and a great new reservoir has been constructed in the "Independencia" park, covering 3,825 square meters and being 405 meters long by an average width of 9 meters, with a depth of 40 meters in places. (1 meter=3.28 feet). The Ministry of Public Works has also carried out in 1919 a study of the watershed of the region north and west of the city, with the object of establishing new reservoirs to take care of the increased water consumption of the city.

The seaport of La Guaira is also having a new aqueduct installed, 6-inch iron piping being used in the street work in the city proper. The estimated daily consumption per inhabitant for Caracas is estimated, from the present aqueduct capacity, at 152 liters (1 liter=0.264 gallons) daily in the dry season and 243 liters daily in the rainy season of the year.

A new sewerage system is now being constructed for Caracas. The work was started June 13, 1919, and is expected to be completed early in 1921. Plans call for a total of 116 circuits covering a drainage area of 2,900 hectares (1 hectare=2.47 acres), and the system is also adequate to take care not only of the sanitary service of the city but also of the excess rainfall, estimated at a maximum of $3\frac{1}{2}$ inches per hour—the collection coefficient being 125 liters per hectare per hour. Reinforced concrete is being used throughout, the same material being used for the double-barreled siphons. Up to June 30, 1920, a total of 2,624 meters of this work had been completed.

With the new aqueduct and sewerage system in operation and the old type of insanitary houses all remodeled, Caracas will undoubtedly be one of the most modern and healthful cities in all Latin America.

As a rule, the streets of Caracas are narrow, averaging about 24 feet in width of concrete pavement, with a sidewalk about 4 feet in width, also of cement, except in the suburbs, where flagging is still much used. With few exceptions the houses are built flush with the sidewalks.

[See Special Agents Series No. 144, "Construction Materials and Machinery in Venezuela," pages 22-23 for "Sewerage system of Caracas," pages 23-25 for "Improvements in the water supply of Caracas," and pages 25-26 for "Distribution of city water."]

BRIDGES—PARKS—THEATERS—HOSPITALS.

Caracas, situated on both sides of the Guaira River and traversed by the lesser Anauro and Catuche Rivers, as well as various creeks, has as many as 50 bridges, many of them of recent construction.

There are two notable parks or "paseos"—the "Paraiso," already mentioned, which is a beautiful drive in the heart of the valley next to the city, lined with beautiful residences, and the Paseo Independencia, also known as "El Calvario," situated to the west of the city on a high hill, from the top of which the city is seen in panorama. The extension of the Avenida del Paraiso, called Avenida 19 de Diciembre, reaches the beginning of the Western Highway, leading out to Los Teques, Victoria, Maracay, Valencia, etc. There are also more than a dozen smaller parks and "plazas" scattered throughout the city.

The theaters are the Municipal, Nacional, Caracas, Princesa, and Calcano. There are also five large motion-picture theaters. The new

bull ring, Nuevo Circo, is of modern cement construction and holds 13,000 people. There is also the Hipodromo Nacional (reached through El Paraiso Drive), where horse racing is held during the winter months, the racing beginning in November and lasting until March.

The hospitals are the Vargas (which is national in character and equipped with modern scientific annexes), the Military Hospital, the Providencia, and several others of charitable character.

Mention should also be made of the artistic development in Venezuela, of which Caracas is the center. One of the living artists, Tito Salas, has exhibited many canvases in the Paris Salon, among them the famous *La Juerga en Sevilla*, which now adorns the Club Caracas. His work also appears in the historical paintings of the dome of the Salon Eliptico in Caracas. Michelena was another of Venezuela's great artists and exhibited many canvases in Paris. He died recently at the age of 37.

FOREIGN COLONY.

The foreign colony of Caracas is numerous and well represented. Roughly, there are about 75 Americans, 125 Germans, 25 Porto Ricans, 30 Syrians, 45 Italians, 30 French, and 40 English, as well as a number of Spaniards, Moroccan Jews, and Sicilians. The German is the oldest and most numerous of the foreign colonies, originally engaged in trade and commerce in the country and gradually united with Venezuelan families by intermarriage, now constituting the second and even third generation. The Germans are affiliated with the Caracas Chamber of Commerce; the Italians have their own organization, called the "Alianza Italiana"; and a recent movement toward the establishment of an American Chamber of Commerce reflected the growing importance of the American colony.

Common meeting places are the several large clubs, the Club Venezuela being the largest organization of the kind in Caracas, with a very cosmopolitan membership. The Club Caracas is known as the business men's club, being frequented by the older and more conservative class of business men. The clubs are very well equipped. Luncheon and dinner are served in all of them.

HOTELS AND PENSIONS.

Caracas lacks good modern hotel accommodations. Properly speaking there is no hotel as the term is understood in the United States, now that the Hotel Klindt is being dismantled for reconstruction into a modern hotel. The largest remaining hotel is the Hotel America, distant one block from the Plaza Bolivar and containing about 20 rooms, one of which is equipped with private bath. Charges are from 16 to 20 bolivars per day (\$2.08 to \$3.86). There are a good many smaller hotels scattered about the city and patronized mainly by Venezuelans from the interior. The most important of these are the Hotel Caracas, Hotel Comercio, and Hotel Union.

In comparison with the hotels most foreigners prefer the numerous and well-kept "pensions" (large private houses, managed as boarding places), which are available for visitors in Caracas. The largest pension, occupying three houses, is the Pension Ibarra,

where charges run from 20 to 40 bolivars (\$3.86 to \$7.72) per day for room and table board, according to the location of the room, etc. The best rooms are those located in the upper story of the house, as these have much more light and ventilation than those situated on the ground floor, with often only a door leading out onto the "patio." Among the pensions patronized by foreigners are the Dominguez, the Myerston, the Vicentini, etc. Persons intending to stay in Caracas for some time usually find comfortable quarters in the house of some private family.

An American hotel company has recently purchased ground out in the "Paraiso" for a large modern hotel, which will be operated in a chain with a number of other hotels in Porto Rico, Habana, etc. It is thought that considerable tourist traffic can be attracted during the winter months if good accommodations are provided. There is much of interest in and about Caracas, and the automobile drives through the picturesque mountains would offer novelty and interest.

In the present hotels and pensions, rooms are not equipped with running water or hot-and-cold-water service. There are usually good tub and shower baths, however. All such rooms are electrically lighted, but lighting arrangements are too often confined to one small bulb hanging high in the center of the room, the illumination being inadequate for writing or reading in the room at night.

COMMUNICATION FACILITIES IN CITY.

The city of Caracas is well supplied with public carriage and automobile service. There are about 50 first-class carriages and 170 ordinary ones for public service in the city, besides more than 100 automobiles for hire, usually of the less expensive American makes. Carriage rates are 5 bolivars (\$0.96) per hour for ordinary and 6 bolivars (\$1.16) per hour for first-class conveyances. Automobiles can be hired at the rate of 20 bolivars (\$3.86) per hour in the city, with fixed rates for longer trips over the highways to places in the near interior. An ordinary car, with driver, costs from 150 to 250 bolivars (\$28.95 to \$48.25) per day, according to the distance covered and the prior arrangements made for the particular trip. By the end of 1918 there were 619 automobiles in Caracas and the Federal District alone, and by the end of 1920 this number had increased to nearly 1,000.

As the street car system does not reach all parts of the city and the service is crowded and slow on account of the narrow streets and congested business center, it is customary for business people to use either light cars or carriages for errands about the city, more especially on account of the heat and rains during the summer months. The carriages offer a cheap and fairly rapid means of conveyance for the traveler and are generally used by salesmen unfamiliar with the city.

The Caracas Electric Tramway Co. operates between 40 and 50 cars over about 15 miles of track in the city of Caracas and has a short interurban line running out to the small town of El Valle—a tunnel, 1,640 feet long, having recently been completed to avoid a heavy grade on leaving the city. The line to El Valle is 5.5 kilometers long (1 kilometer=0.62 mile). Small 5-ton freight cars are operated at night to and from the slaughterhouse with fresh beef

for the morning market. Country produce is also brought in from El Valle, Petare, etc. The passenger cars used in Caracas are all of the open summer-car type, and are very narrow in width, being specially constructed for the narrow streets and the sharp turns that have to be made. They carry 38 passengers each.

Current was first used in 1907, and the Caracas Electric Light Co. (Ltd.) was established in 1912, using the rapids of the Guaira River at El Encantado for the generation of power. The fall is 111 feet and the horsepower developed 1,050. Another hydroelectric plant at Los Naranjos, 2 miles higher up the river, furnishes 1,500 horsepower. Both of these public-utility companies are British.

The Venezuela Telephone & Electric Appliances Co. (Ltd.), with head offices in London and established in Caracas in 1883, enjoyed an exclusive telephone concession that has now expired. There are in operation at the present time 2,475 instruments, with long-distance service to La Guaira, Macuto, Valencia, Puerto Cabello, Ocumare de Tuy, Los Teques, Maracay, and all places of any importance that are connected with Caracas by rail or wagon road. The number of telephones in operation is not sufficient for the actual needs of the city, and the municipality of Caracas, in conjunction with the Federal District, is planning at the present time a new exchange with 6,000 telephones of the latest automatic pattern. Service will be at reduced rates. On account of the lack of instruments in the past, holders of subscription contracts demanded heavy premiums for the cession of their contracts to others seeking telephone service, as much as \$100 being paid for a contract in times past. The number of telephones outside of Caracas on the circuit of the company is 936. The Government operates 222 instruments in Caracas and a total of 178 outside of the city. There are 20,000 kilometers of wire in the company lines and private lines in Caracas and the interior, and the Government has an additional 1,146 kilometers of wire (1 kilometer=0.62 miles). There are numerous short private lines in the country districts, serving haciendas and small towns and connected for the most part with the Caracas exchange. With a larger exchange in Caracas, the urban and long-distance service of the district would be entirely adequate to the needs of commerce and business.

RAILWAYS OF CARACAS AND VICINITY.

The capital of Venezuela has three railways, two of which are of primary importance—the Caracas-La Guaira line, connecting it with the seaport of La Guaira, and the Gran Ferrocarril de Venezuela, running to Valencia, a center of manufacturing and agricultural development. The Ferrocarril Central de Venezuela affords access to the rich coffee and cacao region to the south and east and, when completed through to Ocumare del Tuy, will also afford access to the great llanos lying south of the second, or inland, range of the Coast Range of mountains. The entire region is a populous one and all tributary to Caracas.

CARACAS & LA GUAIRA RAILWAY.

The Caracas & La Guaira Railway has been in service since 1883, and, while one of the shortest lines, it is the most important and best

piece of railway property in Venezuela, connecting, as it does, the capital of the country with the principal seaport of La Guaira, and transporting nearly one-fourth of the freight handled by all lines. The gauge differs from that of the other railways centering in Caracas, being 3 feet, while that of the so-called German road (Gran Ferrocarril de Venezuela) is $3\frac{1}{2}$ feet, as is that of the Ferrocarril Central de Venezuela. The tracks of the La Guaira Harbor Corporation are of the same gauge as those of the Caracas-La Guaira Railway and connect with them, but the railway cars do not go to the ship's side, goods being handled by the harbor corporation to the customs warehouses before shipment to Caracas.

The distance covered by rail is 22 miles or 36.65 kilometers, the road climbing from sea level to a pass more than 3,000 feet high in crossing the steep Coast Range between La Guaira and Caracas. Although in appearance the line is dangerous, it has been so well constructed and is so well policed that there has never been an accident involving the loss of life. Ties are of native hardwoods, and rails weigh 65 pounds to the yard. The maximum grade is $3\frac{1}{2}$ per cent and the minimum radius of curves 43 meters (1 meter=3.28 feet). There is one switchback at "Zigzag," half way up the mountain. There are 15 steel bridges with a combined length of 281.5 meters, and 8 tunnels with a total length of 379.5 meters.

The rolling stock consists of 15 locomotives of 30 tons each (English type), 28 passenger coaches, 20 flat cars of 15 tons each, 63 box cars of 15 tons each, and 34 stock cars transporting 12 head of cattle each, inclosed. Passenger rates equal 10.94 cents per mile for the first class and 6.68 cents for the second class. The freight rate is 26.38 cents per ton-mile for import freight—that is, up grade—and two-thirds of this for export (down-grade) freight, the former greatly exceeding the latter in annual tonnage.

The capital invested is stated as \$3,508,740 and the capital stock of the company as \$1,705,637. The road's best year was in 1891, when material for the German railway was being imported and there were large expenditures for construction work; 87,553 passengers were carried, at a gross return of 728,391 bolivars (\$140,579), and 105,253 metric tons of freight, producing 4,006,962 bolivars (\$773,334), the total operating expense being given as 2,216,777 bolivars (\$427,838). In 1919, 73,305 passengers were carried (508,286 bolivars, or \$98,099) and 76,345 metric tons of freight (2,483,009 bolivars, or \$479,221)—the operating expense, greatly increased by war conditions, being 1,205,046 bolivars (\$232,574).

In the past the condition of the Government Caracas and La Guaira Highway was very poor, but it has been repaired and reconstructed, and competition with the railway by one-mule carts, automobiles, and pack animals is keen, although the commercial use of motor trucks in competition with the railway is not possible as yet on account of the grades and reduced curves of the wagon road and its light macadam surface. The common two-wheeled, one-mule cart, with springs, commonly used in Venezuela for country and town hauling and carrying about 600 pounds to a load, is competing with the railway in organized service for general freight between the seaport and Caracas. On the road two men handle 9 or 10 carts and freight is carried both ways. The cost to the shipper is the same by the railway

and the road—plus cartage charges in Caracas for city delivery if the railway is used.

The railway's purchasing agents in the United States are Bliss, Dallett & Co., New York City. The cost of construction per kilometer of this railway was 496,043 bolivars (\$95,736), equal to \$154,068 per mile, including stations and equipment. A dividend of 6 per cent has been paid regularly on capital shares for the past few years.

CENTRAL RAILWAY OF VENEZUELA.

The Central Railway of Venezuela has been in operation since 1887 and has been slowly continuing construction toward the south from Caracas into the southern division of the Coast Range, penetrating a rough but fairly populous country yielding coffee, cacao, and general produce.

The line has 73.5 kilometers (1 kilometer=0.62 mile) of completed track and 23.5 yet to be constructed, the present terminus being the town of Yare and the objective the town of Ocumare on the Tuy River, with a surveyed extension to Cua toward the west, up the Tuy River, for a distance of 10 kilometers more. The country traversed is described as level 10 kilometers (to Petare), broken 5 kilometers, rough 11 kilometers, and mountainous 34 kilometers. The average cost per kilometer is put at \$67,722. The gauge is 3½ feet, the same as that of the Gran Ferrocarril de Venezuela but different from that of the Caracas-La Guaira Railway, which is 3 feet only. The station is located on the extreme west of Caracas and is about 2 miles distant from the other railway stations, coffee and cacao for export having to be transferred in carts across the city at considerable expense.

The road is a combination steam and electric railway, being operated as an electric line as far as Petare, 9.95 kilometers from the station in Caracas, and this part of the line carries a heavy passenger traffic as suburban business.

The capital of the company is 5,050,000 bolivars (\$974,650) and the investment to date 20,015,000 bolivars (\$3,862,895). The gross receipts the first year of operation were 86,501 bolivars (\$16,695) and in 1891, 295,487 bolivars (\$57,029), but only 73,114 bolivars (\$14,111) in 1902. Since then they have increased steadily and were 765,929 bolivars (\$147,824) in 1915. By 1919 receipts were 1,207,021 bolivars (\$232,955) while operating expenses, including new construction, were 1,043,553 bolivars (\$201,406). In 1917, 31,196 metric tons of freight were handled, with 307,849 passengers. Estimated on a total capital investment of 14,792,712 bolivars (\$2,854,993) in 1919, the returns have been: 1917, 3.06 per cent; 1918, 2.49 per cent; and 1919, 1.10 per cent.

The maximum grade is 4 per cent and the minimum curve radius 50 meters. There are 75 bridges and viaducts, with a combined length of 724 meters, and 14 tunnels. Tiers are of wood and of steel. In some places rails have been placed on limestone blocks, but this method has proved unsuccessful and has been discontinued.

Rolling stock has not been increased during the war; the line now has 8 locomotives weighing 277 tons, 13 passenger cars, 23 flat cars, 14 box cars, and 4 stock cars. The passenger tariff is equal to 3 cents per mile, and the freight tariff is 27 cents per ton-mile. Since 1906 traffic has increased rapidly, and every new 10 kilometers of line

constructed produces revenue to cover new work farther on. The manager is Albert Cherry, of Caracas, and the purchasing agents in New York are Bliss-Dallett & Co. Three mixed passenger and freight trains are run during the week from Petare to San Fernando de Yare.

GRAN FERROCARRIL DE VENEZUELA.

The Gran Ferrocarril de Venezuela (built with German capital) is the longest and most costly railway in Venezuela. It was opened for traffic in 1894, and cost \$15,135,492, or an average of \$85,226 for each of its 179 kilometers of length (1 kilometer=0.62 mile). The line runs from Caracas west to the city of Valencia, capital of the State of Carabobo, second largest city in Venezuela, and the center of the agricultural zone of the country. The construction of this line is much better than is justified by the necessities of the possible traffic, and in latter years the line has been holding its own only by reason of very careful management. It was built under a Government guaranty of interest on the capital invested, which was later canceled in consideration of a cash payment. Formerly placed at 79,000,000 bolivars (\$15,247,000), the capital of this company was reduced in 1919 to 21,000,000 German marks, which at par equals 26,250,000 bolivars (\$5,066,250).

The gauge is 3½ feet, and the weight of rails 47 pounds per yard. The average gradient is 2.2 per cent, with a minimum curve radius of 75 meters. There are 219 bridges and viaducts, having a combined length of 4,656 meters (1 meter=3.28 feet), and 86 tunnels, totaling 6,249 meters in length. Ties are of steel and concrete throughout, except on switch lines, etc. From Caracas the line follows up the Guaira River canyon through a broken and rough country as far as Los Teques, 27 kilometers from Caracas, this length having nine large and small tunnels and numerous bridges. The climb is approximately 850 feet in this distance, and at Los Teques the line crosses out of the river valley and penetrates the solid Coast Range to the north—encountering in the next 47 kilometers the heaviest rockwork of the entire line, and dropping down 2,201 feet in this distance out of the mountain into the river valley again at Tejerias. The distance by highway from Los Teques to Tejerias is only 27 kilometers. The entire region between Caracas and Cagua traversed by this railway is a very rough and broken one, and level land is not encountered until the plains lying east of Lake Valencia are reached at Cagua, from which place the line follows the edge of the hills around the northern shore of Lake Valencia to Valencia. The ride from Caracas to Valencia takes 7 hours, and is a very uncomfortable one on account of the constant choking smoke that fills the cars in every tunnel.

The rolling stock is all of German manufacture and has not been increased during the war. Supplies in late years have been purchased in the United States on account of the time and difficulty in securing them under recent conditions from Germany. There are 18 locomotives, with a combined weight of 720 tons, 30 passenger coaches of first and second class, 68 flat cars, and 20 stock cars. The passenger tariff equals 6.25 cents per mile for second-class and 7.78 per mile for first-class travel. The freight rate is equivalent to 15.65 cents per ton-mile. The best year of this road was 1913, when

gross receipts were \$552,025, and a return of 1.6 per cent on the capital invested was earned. The management has endeavored to promote development by tree planting, the introduction of new crops, and the improvement of stock, but little benefit has resulted. In 1919, 211,442 passengers were carried, producing 1,145,018 bolivars (\$220,988). Freight amounted to 60,495 metric tons of all classes and hauls. Gross receipts were 3,779,174 bolivars (\$729,381), and operating expenses 1,927,125 bolivars (\$371,935). The percentage of gain, calculated on the new capitalization for 1919, was 7.05.

The concession of the company called for two branch lines—one to San Carlos, capital of the State of Cojedes and center of a rich agricultural region (about 100 kilometers from Valencia), and the other from the station of Cagua to San Fernando de Apure on the Apure River, traversing the great llanos of the cattle country, a distance of approximately 350 kilometers.

This road is badly in need of an outlet to the sea, and an attempt was made to purchase the Puerto Cabello-Valencia Railway from the British interests owning it. On the other hand, the British interests owning the Caracas & La Guaira and Puerto Cabello lines have attempted to purchase the German line. The sale of the German road was agitated in 1917.

MACUTO COASTLINE RAILWAY.

This short line is owned by the La Guaira Harbor Corporation (British capital), operating electric cars over 7 kilometers (1 kilometer=0.62 mile) of 3-foot track between Maiquetia and Macuto along the seashore, passing through the town of La Guaira. The principal traffic is in passengers. The capital is stated as 500,000 bolivars (\$96,500) and the cost per kilometer 71,429 bolivars (\$13,786). In 1919, 430,668 passengers were carried and 2,562 tons of freight. The total gross income was 270,628 bolivars (\$52,231) and the operating expenses 146,302 bolivars (\$28,236). In operation since 1896, this line was changed to electrical power in 1918; the entire line was renewed and modernized, and is now being extended to the eastern limits of Maiquetia.

PROPOSED NEW LINES.

A concession was given in 1912 for a railway from Caracas to Guatire via Guarenas, the line to be completed by 1916, with a total estimated length of 53 kilometers (1 kilometer=0.62 mile), but the line has not yet been built. Considerable work has been done on the wagon road to Guatire from Caracas during the past two years, and this will soon be a first-class highway. Active passenger traffic is now carried on by automobile stage, giving rapid service, and freight is taken care of by means of the two-wheeled, single-mule carts of the country, which have demonstrated their ability to compete with the existing railways. The country between Guatire and Caracas is somewhat broken and rough, and railway construction work would be expensive, especially as certain parts of the proposed line would be subject to flood action of the river.

ROADS AND HIGHWAYS OF CARACAS DISTRICT.

During the administration of Gen. Juan Vicente Gomez road construction in Venezuela has been very active and large sums are being



FIG. 9.—AVENIDA DEL PARAISO, CARACAS.



FIG. 10.—PRIVATE RESIDENCE IN CARACAS.

expended for highway construction in all parts of the country, with the result that the automobile is becoming an increasing economic factor in the life of the country—more especially in the Caracas district—though the pack mule still has to be reckoned with as a means of transportation and still competes, over the old trail between Caracas and La Guaira, with the railway and the highway.

EFFECT OF TOPOGRAPHY.

Before giving the general description of the Caracas road system, something should be said regarding the general topography of the district and the road specifications. Between Caracas and La Guaira lies the high Coast Range, over which the road passes at an elevation of more than 3,000 feet above sea level. To the south is the mass of broken hills that lie between the main Coast Range and the division guarding the great plains, the distance in an air line being about 40 miles across this broken country. To the southeast these hills continue until the sea is again reached near Carenero. To the west, nearly as far as Valencia, the country is a series of hills and smaller ranges lying between the two divisions of the Coast Range, with here and there level fields in sugar cane in the bottom of the narrow valley. Directly west and east of Caracas the valley floor is wider, permitting larger fields, some of which contain 200 or 300 acres. The valley continues toward Petare on the east, where there is considerable level land. Farther down the course of the Guaira the river becomes more narrow and forms a series of fairly deep canyons. To the south, southeast, and southwest there is a mass of hills traversed by narrow streams and valleys, with a few fields of cane and other produce. Nearly all the hills are cultivated, being planted to corn, coffee, cacao, and pasture grass for cattle. The northern or sea side of the Coast Range is barren, cacti are abundant, and only goats are herded. It is through this sort of country, formerly only traveled by the sure-footed mule, that the Venezuelan Government is building a system of roads for wheeled traffic.

Curves on the Caracas and La Guaira road are being reduced and cuts made to widen the surface in dangerous places. New macadam is being laid in sections throughout. On this road the distance of 36 kilometers can be covered in one hour in an automobile driven by an experienced man, but the average is 1½ hours. On the other highways, by taking chances, a speed of 30 kilometers an hour can be maintained, but the driver must know the road well and have full confidence in himself and his machine, as very little can be seen of the road ahead when one is driving on account of the frequent high banks of the cuts and the sharp turns encountered. The Caracas and La Guaira road has low stone walls in many exposed points on turns where the drop is many hundreds of feet almost straight down. However, accidents are not very frequent, even at night, and the automobile is being used more and more for long-distance travel throughout the country. In the dry season a car can leave Caracas and reach San Fernando de Apure on the Apure River, in the heart of the Orinoco llanos. An American seven-passenger car has gone from Caracas to Trujillo via Barquisimeto in the dry season of the year, being the first car to make the long trip overland to the Andes.

ENUMERATION AND DESCRIPTION OF ROADS.

The roads of the Caracas commercial district are as follows:

Caracas to La Guaira.—Distance, 34.78 kilometers (1 kilometer=0.62 mile), with an additional 4 kilometers from La Guaira to Macuto, the seaside resort to the east of the port. The elevation of Caracas is 920 meters (1 meter=3.28 feet), and the highest point on this road is at kilometer 15.2 from Caracas—1,004 meters.

Caracas to Guatire.—Distance, 52.35 kilometers. The highest point on this road is at kilometer 18 from Caracas, 960 meters, and the road gradually descends to an elevation of 335 meters at Guatire. The general direction from Caracas is east, and the ultimate objective of the road is the River Tuy, toward the coast southeast of Carenero. Automobile stages are operated on a two-hour schedule out of Caracas, and freight is handled in two-wheeled mule carts. There are numerous small towns and villages along the way; considerable truck farming is carried on, and major crops of coffee, cacao, etc., are produced, as well as sugar cane and corn.

Caracas to Ocumare del Tuy.—Length, 70.2 kilometers. This road leaves Caracas via El Valle and runs directly southward through a hilly country and many small villages and ranches, tapping the richest cacao-producing section of the Caracas district. Passenger traffic is by means of private or hired automobiles, and freight is handled by mule carts. There is considerable pack-mule and pack-burro traffic between Caracas and the small villages along this road. This road is not macadamized as yet. The highest point is at kilometer 24 from Caracas, elevation 1,229 meters, with a descent to 210 meters at Ocumare del Tuy.

Caracas to Valencia.—Originally planned to Valencia, this highway now forms a part of the Great Western Highway of Venezuela, which is under active construction to the extreme western boundary of the Republic, terminating at San Cristobal, near Cucuta (Colombia). The distance by this road from Caracas to Valencia is 148.8 kilometers, the highest point being at kilometer 29, just beyond Los Teques, where the elevation is 1,172 meters, descending to 470 meters at Valencia. A new macadam surface is now being laid on this road out from Caracas, some 6 kilometers being down by October 30, 1920. The road follows the Guaira River canyon upstream, on the opposite side from the German Railway, as far as Los Teques and then crosses the railway to follow down a long, low range south of the main Coast Range of mountains, which lies to the north of the valley. The Guaira is again crossed at Guayas at an elevation of 470 meters, and from there the road follows the railway around the northern side of Lake Valencia to the city of Valencia.

The trip from Caracas to Guayas, a distance of 44.3 kilometers, is one of the most picturesque in any country, with the possible exception of the Maracay and Ocumare de la Costa road, which crosses the Coast Range to the sea and from which can be seen not only the ocean but also the Lake of Valencia, a great body of water. From Caracas the road follows the Guaira on the north bank; on one side there are high hills reaching up into the solid Coast Range, while on the other there is the rather wide valley filled with cane and bordered by low hills on the south—with the narrow river in between. The river is crossed several times on steel bridges, and the road starts to climb

along the sides of the gradually narrowing canyon of the river, which, near Los Teques, becomes a steep, narrow, almost perpendicular gorge, with drops of several hundred feet from the edge of the road into the stream below. The view changes constantly with every turn of the road.

After leaving Los Teques the road strikes down a long line of hills lying away from the Coast Range, and from this ridge can be seen seven lines of hills reaching away to the main body of that section of the Coast Range which borders the great llanos to the south. There are great ravines and canyons between each line of hills. Most of the hills are cultivated. The scenery is beautiful beyond description, but the ride is not one of safety or of comfort to the average traveler. The constant turning and sharp twisting of the road around innumerable turns of very reduced curve radius causes the motion to affect many people. As a highway for the two-wheeled, one-mule carts of the country, which compete with the railway in freight carrying, this road is ideal, and it can be used also for passenger automobile traffic, but not commercially for motor trucks, as the width is too narrow, the grade too steep in many places, and the turns too short, and, moreover, the surface would not stand heavy truck traffic very long. This road is also used for the transportation of cattle from the Maracay district to the Caracas market for slaughter. Herds of 100 or more head are often encountered along the road, holding up other traffic. Considerable work is being done in the way of new bridges over the larger streams, and macadamization is now under way from Caracas.

Gen. Gomez, President elect of Venezuela, lives on his hacienda near Maracay. It is here that cabinet meetings are held, and automobile traffic is fairly heavy at all times between this place and the capital. One of the best hotels in Venezuela is located at Maracay, and an additional attraction is the new hotel recently completed at San Juan de los Morros, south of Maracay, where there are good thermal baths.

There are no figures indicating the total annual tonnage of freight traffic over these roads, but taking that of the paralleling railways as a basis for calculation, it may be estimated that the mule carts handle about one-half as much general-merchandise freight as is handled by the railways.

Maracay to Ocumare de la Costa.—Leaving Maracay at an elevation of 425 meters, this road, started in 1916 by Gen. Gomez, crosses the Coast Range to the seaport of Ocumare de la Costa, situated to the northwest of Maracay and about 40 miles east of Puerto Cabello by water. The total road distance is 58.7 kilometers, and the highest point over the pass is at kilometer 24 from Maracay, 1,120 meters above sea level. There is a new wood pile dock at Ocumare de la Costa, used by shippers of coffee from the many large plantations of this part of the Coast Range and by the small cruiser stationed there by the Government.

Originally built for strategic reasons and under forced labor, this road is receiving extensive repairs and rebuilding, several hundred men being employed for this purpose at the present time. The road is being widened, the curves reduced, the grade lessened, and rock surfacing put on throughout its length.

This road is important as affording access to the proposed new seaport at or near Ocumare Bay. Surveys are now being made to determine the actual location of this new port, harbor construction works, docks, etc.

The new packing house and also the proposed international port will very possibly be located at the new site, and a railway is also planned to Maracay to connect with the Gran Ferrocarril de Venezuela for Caracas. The work being done by the engineers includes the investigation of possibilities for the development of electric power along the right of way to operate the proposed new railway.

The point known as San Juan de los Morros is the outlet to the great llanos of the cattle country of Venezuela, stretching away to the south for 200 miles. Cattle for shipment come from the plains through San Juan de los Morros, Villa Cura, and to Cagua or Maracay, from which the nearest shipping or consuming point will be Ocumare de la Costa if the new packing plant is located there. There is a very large area of level pasture land made into "holding pastures" around the eastern end of Lake Valencia.

Llanos Road, Cagua to San Fernando de Apure.—This is a tributary road, connecting with the Great Western Highway at Cagua, where it also joins the Gran Ferrocarril de Venezuela. Cagua has an elevation of 472 meters, and Villa Cura, 20 kilometers farther south, of 556 meters. San Juan de los Morros is 45 kilometers from the railway at Cagua, and the distance to Calabozo is 175 kilometers. Here the elevation is only 100 meters, and at San Fernando de Apure only 73 meters above sea level. The total distance from the railway at Cagua to San Fernando is 334 kilometers, but after one leaves San Juan there is little habitation of the country until Calabozo is reached, and still less farther on toward the Apure River.

The road is worked with a good dirt fill as far as San Juan de los Morros, but from there on it is no more than a wheel track across the great plains, and can be traveled by wheeled vehicles only during the dry season of the year—from November to the end of May. There are sandy stretches beyond San Juan, and during the rainy season areas of the country are flooded. Transport is by means of wagons drawn by mules and oxen from Cagua. The merchants of San Fernando de Apure do not import directly, but buy from wholesalers in Caracas, Puerto Cabello, or Ciudad Bolivar. As has been said, the merchants of Caracas compete with those of Maracaibo and Ciudad Bolivar for the business of the interior. During the wet season of the year river steamers can reach San Fernando from Ciudad Bolivar, but not during the months from November to June (or July, according to the season). During these months the llanos are dry and can be traversed by wagons, and trade with the Orinoco and Apure Valleys has been developed by the Caracas merchants over this route, though with increasing costs and difficulty in latter years on account of the increasing cost of wagon freight. Formerly wagon freight from Cagua to San Fernando cost 60 bolivars (\$11.58 at par) per "carga" of 100 pounds, and in certain years this rate was as low as 40 bolivars (\$7.72) per 100 pounds. The long dry season of 1920 and the increasing cost of animals increased this rate to between 80 and 100 bolivars (\$15.44 and \$19.30). Corn for feed was very expensive, pasture grass was scarce, and in many places where wells

had to be used to water stock (draft animals) a charge was made of 0.50 bolivar (\$0.0965) per head. Costs were also increased by the fact that the bad climate of the plains caused sickness among the draft animals used in this traffic. Many animals are lost in this manner in each trip. In the dry season motor trucks of light weight could be used as far as Calabozo, but with difficulty and at a high cost. Trucks with a capacity of about 1½ tons are recommended for this section. After one passes Calabozo there are many very sandy stretches of the road, which is an open track across the wild country.

Eighty kilometers from Cagua, near a point known as Uverito, the hills of the southern division of the Coast Range end, and the road is very good as far as Ortiz, 98 kilometers from the railway. Between Ortiz and Morrocoys, 122 kilometers from the railway, there are 300 men at work on the road, but it is not yet in a state for wheeled-vehicle traffic except in the dry season. During the rainy season the Guarico River is navigable for canoes and light scows from a point called Puerto Maicera, 20 kilometers south of the town of Calabozo, down to San Fernando. Mule carts make the round trip, in the dry season, from Cagua to San Fernando and return in 26 days, the expenses of carts, men, mules, etc., being estimated at 12 bolivars (\$2.31) per day per cart carrying 600 pounds, with two men to each 10 carts and one foreman on horseback.

NOTES CONCERNING GREAT WESTERN HIGHWAY.

Connecting with the Great Western Highway at Valencia are a number of other roads on which active work is being done to fit them for automobile traffic: Valencia to Puerto Cabello (now ordinarily used for automobile travel), length, 53.6 kilometers; Valencia to Nirgua, length, 100.5 kilometers; Valencia to San Carlos (part of the Great Western Highway), length, 98.75 kilometers; and Puerto Cabello to San Felipe, length, 92.06 kilometers.

The Great Western Highway has been surveyed through to San Cristobal, near the Colombian border at Cucuta, and construction work has passed San Carlos and is being carried forward from Guanare and Barinas by sections. The entire road from Valencia to San Carlos is being repaired and reconstructed also. This work is being done by the Federal Government under the direction of the Ministry of Public Works. Common labor is paid 4 bolivars (\$0.772) per day of 12 hours, and is recruited from the political divisions of the States through which the road passes, each municipality having to furnish its quota of men for the road work on the basis of two days per week for each man, according to the population of the several districts. In the llanos, which begin near Valencia, toward San Carlos, distances are very great and the population very sparse and scattered. Men often have to travel for two days on foot to reach the road camps.

MOUNTAIN AND COAST TRAILS.

The Caracas district is also well supplied with mule trails, nearly every small town and mountain village having its connecting link in the shape of a good and well-repaired mule trail over which the local produce passes to market or for shipment into Caracas by the

railway. Among these is the trail from La Guaira to Curiepe, via Carenero, with a total length of 122.1 kilometers (1 kilometer=0.62 mile) and connecting many small coast villages. There is also the old mountain mule trail from Caracas to Los Teques, via Carrizal, 31 kilometers in length; and the old trail from Caracas to Tacata, via Prim, 43 kilometers in length, and serving many small ranches and tiny villages of the district. A branch trail of this latter trail from Taica (on the Tacata road) to Soapire, 31.8 kilometers long. Another branch of the same trail goes from San Diego to Cua, on the Tuy River, and is 30.5 kilometers long. From Los Teques there is another old trail leading to El Consejo, via San Pedro, 34.8 kilometers long. From Las Adjuntas, on the railway, a trail goes to Colonia Tovar, 32.3 kilometers to the north in the mountains of the Coast Range. From here another good trail leads out to El Consejo again. Colonia Tovar is also connected with La Victoria, on the railway, by a trail 27 kilometers in length, and another trail goes to Maiquetia (La Guaira), by way of Carayaca, the distance being 54.3 kilometers. Colonia Tovar is also in touch with Caracas over a more direct trail, via Agua Negra, the distance being 47.5 kilometers.

The ancient mule trail from La Guaira to Caracas, 15 kilometers in length, is still in daily use by pack animals in competition with the railway. From Guatire, connected to Caracas by highway, a trail goes to the small town of Curiepe on the coast, forming a circuit with La Guaira. From Caracas a direct mule trail goes over the range to Charrallave, climbing to an elevation of 1,470 meters. Santa Lucia, now on the Central Railway, also has a direct mule trail to Caracas via the Arenaza Canyon, the distance being 47.5 kilometers. A connecting trail runs from Santa Lucia to Guarenas on the Caracas-Guatire highway. From Guatire another trail goes to the town of Caucagua, 40 kilometers away to the southeast. Santa Lucia has two other trails leading to Caracas, one via Los Mariches, 47.5 kilometers long, and the other via the range of Turgua, 43.75 kilometers long. From the mouth of the Tuy River, at Paparo, a road is being constructed to connect with the Central Railway at Ocumare del Tuy. This trail at present follows up the Rio Tuy to the river port of Tapipa. Another connecting trail is that running from Ocumare del Tuy at the end of the Central Railway to Carmen de Cura, 43 kilometers to the south, which is the junction point of a number of tracks across the great llanos in all directions.

With a total population of 431,143 in the Federal District and the States of Aragua and Miranda, comprising the immediate commercial district of Caracas—and considering Valencia and its district as a separate unit—it may be said that Caracas possesses a more elaborate and better system of roads and trails (having regard to the territory covered and the population) than any similar region of South America or Mexico. Even the mule trails are of importance, since they serve as an easy and cheap means of communication between many small villages, otherwise inaccessible, producing a variety of fruits, vegetables, poultry, hogs, cane, bananas (a staple article of diet), coffee, and cacao. These trails are 2 meters (1 meter=3.28 feet) wide, as a rule, and are always well kept up and easily traveled by animals, even in the rainy season of the year. The

total kilometers of wagon road (highway) amount to 539.83, and the mule trails cover a total distance of 894 kilometers.

PORT OF LA GUAIRA.

The commercial district of Caracas has one large seaport, La Guaira, which is at the same time the principal seaport of the country. There is another smaller port at Carenero (situated approximately 60 miles by sea from La Guaira), from which place a railway runs to Guapo, a distance of 54.40 kilometers (1 kilometer=0.62 mile), through the coast region known as "Barlovento."

LOCATION—CLIMATE—POPULATION.

La Guaira lies directly north of Caracas (the distance in an air line being not more than 9 miles) but separated from it by the high Coast Range, over which the lowest pass is more than 3,000 feet above sea level, making the actual rail distance 22 miles. La Guaira is located on a narrow strip of level land along the beach. The range is very steep on the seaward side, forming a veritable wall between the interior of the country and the ocean. The mountains ascend to 5,000 feet behind the port.

The first settlement in the neighborhood was at a point known as Caraballeda, about 8 miles west of the present port of La Guaira, the present town being founded in 1588 shortly after the seat of government was moved from Coro to Caracas.

The population is about 9,000. The mean annual temperature is 84.5° F. The death rate is 33.1 per 1,000. The place is terribly hot at times, and this is always true when one is away from the cooling trade winds. Though its reputation in the old days was that of a dirty, unsightly town, La Guaira is having many modern improvements, such as a sewerage system, a better water system, additional electric lighting, concrete-paved streets, and sanitary dwellings under the new regulations of the Sanitation Office of Venezuela. The prevailing diseases are malaria and tropical anemia in their many forms. Yellow fever has been practically unknown for years. The bulk of the population consists of Negroes and mulattoes, many of them from the West Indian Islands, such as Jamaica, Martinique, Curaçao, Trinidad, Grenada, etc.

The principal industry is handling cargo for the shipping and railway. A very considerable coastwise traffic is carried on by Venezuelan steamers and sailing schooners, as well as a considerable trade with the islands of the Caribbean, Porto Rico, Cuba, etc.

SUBURBS OF MAIQUETIA AND MACUTO.

The two suburbs of Maiquetia and Macuto (the first just west of the town of La Guaira proper and the latter 4 kilometers to the east along the beach, and both connected with the city by electric railway line) are popular places for the people of Caracas who come down to the sea on vacation and for health. Many very pretty "quintas" or "villas" are seen, and Macuto has a very fair hotel for visitors, the Alemania, with two buildings and about 30 rooms. There are inclosed sea baths at Macuto. Hotel charges range from 12 to 20 bolivars (\$2.32 to \$3.86) per day for room and meals. One of the

things to do during a stay in, Caracas is to go down to Macuto for the week end.

CHARACTER OF HARBOR.

There is no natural harbor at La Guaira. In former years it was an open roadstead, and cargo was transferred into lighters alongside of vessels rolling heavily in the swell. Advantage has been taken of a slight projection of the coast to build a breakwater, which now forms the protected harbor for vessels. The harbor works were carried out in 1891 by a British company called the La Guaira Harbour Corporation, under a concession from the Venezuelan Government. The total cost was £980,000 (\$4,769,170). The original contract was given to Punchard & Co., who decided, in view of the fact that the roadstead was open to the waves to the north and east only, that a straight east-and-west breakwater would prove most effective. The length was to be 2,050 feet, and the design allowed for the inclosure of 90 acres of water at an average depth of 30 feet, for 3,100 feet of quays, and for 18 acres of reclaimed land. There are seldom severe wind storms (never a full gale), and the strong swell and huge waves are the principal difficulties to be met. This movement is not entirely counteracted by the breakwater. The work was commenced in December, 1885, but the first breakwater was destroyed by a particularly heavy swell in December, 1887; the second was begun in July, 1888, and completed, more or less as it stands to-day, in July, 1891.

The approach to the harbor is easily accessible. There are no other aids to navigation than the small light placed on the end of the breakwater. The depth at the entrance around the end of the breakwater is 28 to 30 feet at mean low water. The sheltered area of the harbor formed by the east-and-west breakwater (of stone and concrete, 623 meters long) is 75 acres, with a minimum depth of 28 feet at mean low-water mark. The minimum depth in the anchorage ground at extreme low water is 25 feet. The holding ground is good—composed of rock covered with mud. Vessels anchor just off the end of the breakwater for inspection and then come alongside the mole (inner side of breakwater).

The maximum rise of the tide is 3 feet, and the minimum fall is 3 feet.

Four mooring buoys, owned by the La Guaira Harbour Corporation, equip the harbor.

The deepest draft for a vessel that can safely navigate the harbor is 25 feet.

The prevailing winds are northeast and southwest. Storms seldom interfere with shipping traffic, though squalls may be expected during the spring and fall equinox seasons.

WHARVES, PIERS, AND WAREHOUSES.

There are three wharves and piers for the accommodation of sea-going vessels. The total wharfage available amounts to 2,063 linear feet. Three steamers can be accommodated at one time. There are four warehouses, and the total gross capacity of storage floor space is 5,134 square meters (1 square meter = 10.76 square feet), including covered sheds.

The freight-handling equipment on the mole consists of one 12-ton crane of steam-power, revolving type, located at the inner end of

jetty No. 2 and one 5-ton revolving crane (steam power) at the inner end of jetty No. 1. Railway cars of the Harbour Corporation run to the center of all jetties over a sunken track. The large revolving 12-ton crane will take 12 tons at a boom radius of 36 feet. There is also a 15-ton locomotive crane.

For coastwise traffic there are four small revolving cranes, three of which are located on the track, or land, side of the Inner Basin landing for coastwise and island schooners, etc. Three of these cranes are of 3-ton capacity and one of 5-ton capacity.

The combined space of Jetties Nos. 2 and 3 is roofed, as is Jetty No. 1. The floor areas are 215 by 15 meters (1 meter=3.28 feet) and 70 by 15 meters, respectively. The two sheds will hold 6,000 tons of general cargo. Railway tracks run underneath the sheds. The wall on the sea side is of concrete as a protection from wetting by high seas breaking on the outer side of the breakwater. Freight unloaded from steamers lying alongside jetties is conveyed in the cars of the Harbour Corporation to one of the series of warehouses situated on the water front just inside of the coastwise traffic docks. Warehouses Nos. 1 and 2 are the largest, giving a total inside floor space of 58 by 28 meters, with track running down the middle—cars coming to floor level for easy loading and unloading. Here import merchandise is stored under customs control for inspection and dispatch to Caracas.

Along the coastwise docks there are three large warehouses—"Bajo Seco," measuring approximately 65 by 10 meters; "Cabotaje," 60 by 10 meters; and "Orion," 70 by 10 meters. All warehouses are of reinforced-concrete walls, carrying a steel-truss roof covered with galvanized iron, the walls extending up to a large ventilating space under the edge of the roof. The floors throughout are of concrete.

CARGO-HANDLING CAPACITY OF THE PORT.

The total number of metric tons of freight handled during 1919—a heavy year in importation of foreign merchandise—was, in round numbers, 38,000, or an average of 3,166 tons per month, with the heaviest month running less than 8,500 tons. Freight comes in heavily after the buying seasons, which follow the coffee and cacao harvest and the export season—December and May—and then falls off in volume during the rest of the year. The heaviest year in the history of the corporation was that of 1893, when the grand total of roughly 96,000 tons was handled; this heavy tonnage was caused by the construction of the Gran Ferrocarril de Venezuela, and much of it consisted of such things as locomotives, bridge material, etc. At this time the port lacked most of its heavy-lift equipment and had only two steam cranes, as compared with the six now in operation, and the corporation possessed 12 less cars for moving freight to and from the Caracas & La Guaira Railway terminal. The 96,000 tons were handled that year without congestion or difficulty, although the country's imports, considered in tons, were almost as great as in 1919. Since 1893 other sheds and warehouses have been added for the storage of freight, the docks (jetties) extended, and facilities generally increased by the combination of the two large warehouses, Nos. 1 and 2, and the construction of sunken tracks between to aid in the easy handling of freight. The port is equipped

to handle an average of 240,000 metric tons of freight in and out per year, or an average of 20,000 tons per month, without the addition of more equipment or storage space. The working force is well trained and experienced.

The Caracas & La Guaira Railway has also sufficient rolling stock on hand to take care of this amount of cargo in and out and to keep freight moving away from the docks and warehouses in La Guaira. Congestion is a matter of customs inspection and rapidity of release for shipment to Caracas.

Stevedoring rates are based on the metric ton of 1,000 kilos, or 2,205 pounds. The cost of discharging cargo is 60 cents per hour, with 40 cents additional for overtime in daylight and 60 cents at night. The regular hours of work are from 7 a. m. to 4.30 p. m. The period of overtime in daylight is considered as being from 4.30 p. m. to 6.30 p. m.

The rate of handling cargo is 20 tons per hour per hatch per gang of 20 men. The discharging rate varies according to the nature of the cargo, as freight can not be placed on the wharf faster than the customhouse men can check it.

The class of labor employed is West Indian Negro and native mulatto. Experienced laborers are scarce, and most of them are employed by the Harbour Corporation.

Coal and heavy-lift cargo is usually discharged into steel lighters lying alongside the vessel. There are six steel lighters, each of 30 tons capacity, and the rate of rental is \$3.65 per hour.

FUEL FOR STEAMERS—FACILITIES FOR REPAIRS.

There are no bunkers. A small supply of Cardiff briquets can be obtained as emergency fuel for steamers—loaded from lighters alongside. Trimming is by the usual stevedoring rate, as above. The cost of coal varies according to the supply on hand and the arrangement made with the company.

There is a small repair shop for railway and harbor equipment, but facilities are poor for ordinary repairs. There are no floating or graving docks at La Guaira, the nearest being the two floating docks of the National Dry Docks and Shipyards at Puerto Cabello, owned and operated by the Venezuelan Government. The steel dock there has a capacity of 3,000 tons, but is said to be in poor condition and dangerous for a heavy vessel up to the dock's capacity.

[An additional statement, covering pilotage and towage, charges, fees, and dues, and numerous other details relating to the port of La Guaira is in manuscript form and will be loaned by the Bureau of Foreign and Domestic Commerce to interested persons referring to file No. 44312.]

INDUSTRIES AT LA GUAIRA.

There are no sugar mills, flour mills, cotton mills, lumber mills, or the like in La Guaira. (For an account of such establishments in Caracas, see p. 170 of this report.) La Guaira has one small soap factory and a chocolate factory with sufficient production for local consumption, but not for export. The exports are principally coffee, cacao, and hides; of manufactured products, a small amount of sugar is being exported to the United States, sandals to the West Indies, cottonseed oil to Porto Rico, etc.

STEAMSHIP SERVICE.

The "Red D" Line runs weekly steamers between New York, Porto Rico, La Guaira, Puerto Cabello, and Curaçao, carrying passengers and freight.

The New Orleans & South American Steamship Co. (W. R. Grace & Co.) operates two monthly 3,000-ton steamers between New Orleans and La Guaira, touching at Puerto Cabello—coming down by way of the West Indies and returning via Colon and Central American Atlantic ports to New Orleans.

The Caribbean Steamship Co. runs monthly freight steamers (Norwegian charters) from New York to La Guaira and Puerto Cabello, via Colon.

The Harrison Line (British) has monthly steamers for freight only between Liverpool and Venezuelan ports and Colon.

The Leyland Line also operates monthly freight steamers from Liverpool, touching at La Guaira and Puerto Cabello and Colon.

The Compagnie Générale Transatlantique operates monthly steamers from Havre, touching at La Guaira and Puerto Cabello, coming down by way of the French West Indies (Martinique) and returning by way of Colon. This company has recently augmented its Caribbean service with two new and fine passenger steamers of 12,000 tons each.

The Compañía Transatlántica Español operates monthly steamers from Barcelona, Spain, via Habana, touching at La Guaira and Puerto Cabello.

"La Veloce" (Italian) operates monthly steamers between Genoa and Colon, via Habana and the Venezuelan ports of La Guaira and Puerto Cabello.

The Compañía Venezolana de Navegación Fluvial y Costanera operates a fleet of small steamers coastwise and to Trinidad, Curaçao, and Maracaibo, running from Port of Spain, Trinidad, to Ciudad Bolívar up the Orinoco River (see p. 165).

The Empresa Carenero (agents, H. L. Boulton & Co.) operates one small steamer between La Guaira and the port of Carenero, connecting the Carenero Railway and serving that part of the coast east of Caracas between La Guaira and Guanta.

PORT REGULATIONS REGARDING PASSENGERS AND THEIR BAGGAGE.

At La Guaira there are very strict regulations regarding the landing of passengers and their baggage. Persons other than those with destination at the port and with passports for La Guaira must obtain a permit from the prefect of police before going ashore for sightseeing or shopping, or for the trip up to Caracas between the arrival and sailing of the steamer. Passengers for steamers leaving must have their passports viséd not only by the appropriate consular representative but also by the prefect's office, this latter visé being equivalent to a sailing permit. These landing or sailing permits are first taken to the customhouse (up stairs, in the main office), where they are approved for release of baggage, and then to the office of the prefect of police, some distance away, in another part of the town. The usual system employed is to utilize the services of one of the many registered porters who make a business of taking care of passengers at the port. These men all have numbers and are

now organized into a union or body under the regulations of the prefect issued August 28, 1920.

STATEMENT OF TONNAGE MOVEMENT—IMPORTS AND EXPORTS.

Total imports handled by the La Guaira Harbour Corporation during the year 1919 amounted to 599,057 packages, with a total weight of 38,843.5 metric tons (1 metric ton=2,205 pounds), of which 30,145.8 tons came from the United States, 4,486.09 from the United Kingdom, 688.4 from France, 1,599.7 from Spain, 1,258.5 from the Netherlands, 3.3 from Cuba, 374.9 from Chile, 31.9 from Panama, 85 from Italy, 149.1 from Japan, 18.9 from Denmark, and 1.5 from Colombia.

During 1919 a total of 152 ships called with cargo at La Guaira; the highest month was September, with 19 vessels of ocean tonnage, and the lowest months were January, March, April, and October, with 10 ships each. Of these ocean vessels, 51 were American, 22 British, 16 French, 1 Spanish, 11 Venezuelan (including 10 sailing vessels), 14 Norwegian, 9 Italian, 16 Dutch (including 2 sailing vessels) and 1 Colombian (sailing vessel).

Imports were divided as follows: Merchandise (general), 9,753 metric tons; hardware, 5,138 tons; provisions and liquors, 14,108 tons; oils, other than kerosene, 825.9 tons; kerosene, 2,451 tons; timber, 368.9 tons; cement, 4,240 tons; coal, 592 tons; machinery, 1,089.8 tons; railway and tramway equipment and materials, 273.7 tons.

The foreign export tonnage is shown below:

[Kilo=2.2046 pounds.]

Articles.	Packages.	Kilos.
Coffee.....	233,742	14,782,808
Cacao.....	166,497	10,738,291
Hides.....	81,004	864,063
Brown sugar.....	34,596	1,719,874
Corn.....	5,415	271,293
Others.....	41,368	2,255,802
Total.....	562,622	30,632,331

In order to show the relative importance of the several countries supplying merchandise to the Caracas commercial district, the following figures are given for the imports at the port of La Guaira during the year 1919:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Countries of origin.	Kilos.	Bolivars.	Countries of origin.	Kilos.	Bolivars.
British Guiana.....	2,500	250	Netherlands.....	324,882	1,228,025
Chile.....	1 374,900	1 210,754	Panama.....	76,128	314,211
Colombia.....	80	340	Porto Rico.....	494	5,991
Cuba.....	769	17,769	Spain.....	1,617,539	3,430,575
Curaçao.....	692,241	73,876	Trinidad.....	213,690	164,017
Dutch Guiana.....	2,500	251	United States.....	28,292,288	71,149,354
France.....	576,802	2,978,375			
Great Britain.....	3,969,914	22,914,727	Total.....	36,420,381	108,347,775
Italy.....	275,634	859,257			

¹ Imports from Chile consisted entirely of flour.

² More than 60 per cent (by value) of the imports from Great Britain were of cotton cloth.

Imports at La Guaira by parcel post during 1919 amounted to 68,625 kilos, valued at 5,767,301 bolivars (\$1,113,089), of which 41,540 kilos, valued at 5,057,367 bolivars (\$976,072), came from the United States.

The following table shows the exports from La Guaira during 1919, by countries of destination:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Countries of destination.	Kilos.	Bolivars.	Countries of destination.	Kilos.	Bolivars.
Barbados.....	388	3,000	Netherlands.....	1,688,103	4,369,419
Bonaire.....	19,800	5,404	Martinique.....	772,213	1,191,212
Canary Islands.....	238,495	412,025	Panama.....	1,340	7,996
Colombia.....	48,936	161,171	Porto Rico.....	2,882	7,176
Cuba.....	132,000	66,000	Spain.....	3,660,997	6,163,996
Curacao.....	1,181,289	761,468	Trinidad.....	349,956	470,593
Dutch Guiana.....	13,213	7,928	United States.....	7,451,882	17,125,067
France.....	8,241,402	16,964,862	Total.....	27,982,339	55,094,918
Great Britain.....	3,966,949	6,926,864			
Italy.....	212,494	447,792			

The remarkable feature in the above table of exports is the large amount taken by France—790,000 kilos more than the United States and more than double the figure for Great Britain. This is explained by the heavy shipments to France of coffee (5,112,855 kilos) and especially of cacao (2,339,172 kilos).

The foregoing figures are from the official Venezuelan Estadística Mercantil y Marítima. According to the figures of the United States consulate at La Guaira, the articles invoiced for exportation to the United States from that port during 1919 and 1920 were as follows:

Articles.	1919		1920	
	Quantity.	Value.	Quantity.	Value.
Antiques.....		\$180		
Cocoa.....	pounds.....	7,323,764	1,534,327	11,205,699
Coffee.....	do.....	7,632,266	1,562,049	9,340,475
Copper, old.....	do.....	21,725	2,530	6,867
Cylinders.....	number.....	1,057	8,980	142
Glycerine.....	pounds.....	29,152	8,785	4,104
Gold and platinum.....			9,102	
Hides.....	pounds.....	1,903,630	614,846	887,028
Horns.....	do.....	2,205	6,922	
"Papelón".....	do.....	2,239	203	
Pearls.....			13,137	
Plants.....			394	
Rubber.....	pounds.....	5,758	9,967	309
Rubber scrap.....	do.....	20,281	1,113	
Sabadilla.....	do.....	206,001	16,767	30,476
Skins.....				
Goatskins.....	do.....	257,941	79,674	48,510
Deerskins.....	do.....	82,332	21,797	61,215
Calfskins.....	do.....	150	33	
Sole leather.....	do.....	505	362	
Sugar.....	do.....	332,653	158,443	465,441
Tortoise shell.....	do.....	1,309	2,551	
Others.....			2,125	
Total.....		4,054,287		4,654,645

Returned American goods amounted to \$47,680 in 1920, as compared with \$45,753 in 1919.

Exports from La Guaira to Porto Rico were valued at \$6,022 in 1919 and at \$37,210 in 1920.

Imports into La Guaira during the year 1919 by coastwise trade, according to Venezuelan statistics, amounted to a total of 43,782,650 kilos, valued at 25,671,406 bolivars (\$4,954,581), or, in value, about one-fourth of the imports handled from foreign countries during the same year. The largest movement consisted of coffee and cacao for reexport, handled by the Caracas merchants and coming in from points along the coast to the east and west.

Coastwise exports from La Guaira totaled 17,463,072 kilos, valued at 56,036,202 bolivars (\$10,814,987), of which a large percentage consisted of foreign-made goods, medicines, foodstuffs, etc., resold by Caracas merchants to points along the coast. These reshipments from Caracas along the coast and to interior points reached from the ports amounts to 22 per cent of the total imports of foreign merchandise into the Caracas district. To this percentage must be added the goods moving along the railways centering in Caracas and penetrating to the edge of the "llanos" to the south and also going to the Valencia agricultural district in competition with the merchants of Puerto Cabello and Valencia. Also, a large proportion of the direct imports into Maracaibo, destined for the Andean region, are handled from Caracas as the wholesaling center. It may be estimated that at least one-third of the goods of foreign origin imported into Venezuela for Caracas are ultimately reshipped to points along the coast or to the interior outside of the immediate commercial district of the capital.

PORT OF CARENERO.

LOCATION OF PORT—CHARACTER AND PRODUCTS OF TERRITORY SERVED.

Sixty miles east of La Guaira is the small port of Carenero, from which the Carenero & Rio Chico Railway runs along the coast through Rio Chico to Guapo, a total distance of 54.4 kilometers (1 kilometer=0.62 mile), the line having been built in 1884. The principal town is Rio Chico, 32 kilometers from Carenero and only 4 miles from the sea (the port being Carenero). The country may be described as a long, sandy stretch of beach and low coast lands, with a large, shallow bay at the mouth of the Tuy River, which the line crosses at right angles, Rio Chico being to the south but practically at sea level also. Rio Chico is the loading point for a great deal of the coffee, cacao, corn, beans, and hides coming down from the upper waters of the Tuy and the country south and east of the Central Railway of Venezuela. Hides from the great llanos farther south are shipped from here to Carenero and thence to La Guaira for over-sea shipment. There is considerable good, level alluvial land in the neighborhood of Rio Chico, but the climate is very hot and tropical conditions prevail. The town of Rio Chico has about 20,000 inhabitants and considerable native industry in the making of soap, candles, and the native sandals, called "alpargatas," which are exported to the islands of the West Indies and sent out coastwise also. Higuerote, 6 kilometers from the port, has only 10,000 people, and is of less importance than Rio Chico.

CARENERO RAILWAY.

The Ferrocarril de Carenero (French capital) was built in 1884, the capitalization of the company being 4,000,000 bolivars (\$772,000)

and the rail distance 54.4 kilometers (1 kilometer=0.62 mile). It serves the cacao-producing section known as the "Barlovento," that being the local name given to this section of the coast. The gauge is 3 feet and the rail weight 40 pounds per yard. Rolling stock consists of 5 locomotives (weighing altogether 90 tons), 5 passenger coaches, 6 flat cars, 22 box cars, and 9 stock cars. The passenger tariff equals 6.28 cents per mile, and the freight rate is 46.6 per ton-mile. Despite these rates the line has shown a favorable balance in only 4 years out of the last 27. The heaviest traffic was in 1910, when 9,937 tons of freight were transported. In 1915 the tonnage was 7,506 and the gross income was 312,614 bolivars (\$60,335), or 21,749 bolivars (\$4,198) less than expenses. The road's management also runs a steamer service between Carenero and La Guaira. The owner is Sr. Victor Crassus, of Caracas, and the manager is Sr. R. F. Crassus, of Rio Chico.

The road has no tunnels, but there are 77 small bridges and viaducts with a total length of 877 meters (1 meter=3.28 feet). The minimum radius of curve is 84 meters and the maximum gradient 3 per cent. The construction cost per kilometer was 73,529 bolivars (\$14,191). In 1919 the road carried a total of 20,037 passengers and 6,922 tons of freight, producing gross receipts of 314,139 bolivars (\$60,629) for both. The cost of operation and maintenance was given as 312,677 bolivars (\$60,347), almost equaling the gross revenue from all sources. A mixed passenger and freight train is run every other day, going down from the port one day and coming back the next.

At kilometer 22 the line crosses the Paparo River and then follows the seashore for a considerable distance over a long fill with swamps on the land side. In 1917, in the latter part of the year, heavy floods of the Tuy River undermined the banks of the river at the town of Paparo on the south bank, washing away some 20 houses and flooding the entire area because the embankment of the railway acted as a dam. At Boca Vieja and Paparo traffic had to be transferred with boats, and the line was not in operation from Rio Chico to Guapo for some time, normal service being resumed in January, 1918. Two large culverts were built into the embankment at Paparo to take care of flood waters and give them an outlet to the sea. A new station has replaced the old one at San Fernando, and a reinforced concrete house has been built for employees at Carenero.

HARBOR OF CARENERO.

The harbor of Carenero is a small, deep bay protected from the heavy swells. Communication is by means of the steamship *Colon* (owned by the railway company), of several hundred tons, which plys between Carenero and La Guaira, making weekly trips with passengers and freight. By Executive decree of July 1, 1917, this port, together with five others (Barrancas, San Felix, Rio Caribe, Guanta, and Tucacas) were declared ports of export only. Merchandise for these ports, when cleared at La Guaira, Puerto Cabello, or Carupano, is entitled to a customs rebate of 0.05 bolivar (\$0.00925) upon each kilo (2.2046 pounds) of gross weight as compensation for the extra expense of transshipment. There is one small pier of old rail piling for the landing of small vessels. The depth at the end of

the pier is 11 feet. The harbor is said to be capable of development into a first-class roadstead for large vessels, and plans have been formed in the past for a railway from Petare, on the Central Railway, via Guatire, to Carenero, the grade being an easy one with no great obstacles. However, with the development of the plans for the new Government harbor at Ocumare de la Costa or Turiamo, there is small prospect of this extension being carried out for some time to come.

Higuerote has no pier, and the beach is open.

IMPORTS AND EXPORTS AT CARENERO AND HIGUEROTE.

Carenero and Higuerote come under the jurisdiction of the port of La Guaira. During the year 1919 Higuerote imported a total of 1,712 tons of general merchandise, valued at 1,423,631 bolivars (\$274,761), and Carenero received 1,693 tons, valued at 3,423,281 bolivars (\$660,693). Of this last sum, 597,155 bolivars (\$115,251) was in foreign merchandise from La Guaira. Exports from Higuerote amounted to 1,356 tons, valued at 957,779 bolivars (\$185,237), and consisted principally of cacao, amounting to 907,987 kilos, valued at 837,574 bolivars (\$161,652). Carenero, during the same year, shipped a total of 3,685 metric tons, valued at 2,702,566 bolivars (\$521,595), of which 3,261,706 kilos, valued at 2,543,627 bolivars (\$490,920), was cacao.

COASTAL REGION EAST OF CARENERO.

The coast to the east of Carenero is a wide, shallow bay, lined with swamps in many places, with the land gradually ascending to the watershed of the llanos to the south. The high Coast Range ends at Carenero and begins again near Barcelona and the port of Guanta. This stretch of coast affords a natural access to the great plains of the Orinoco, but is sparsely inhabited. There are no ports of any consequence until Guanta is reached. The climate is very tropical.

POINTS WEST OF LA GUAIRA—PLANS FOR NEW SEAPORT.

To the west of La Guaira along the coast there are a number of small bays which serve as loading points for the coffee plantations of the region—the entire Coast Range as far as Puerto Cabello being a series of large and small coffee plantations. Traffic is by means of small schooners and launches. The principal point between La Guaira and Puerto Cabello is the harbor of Ocumare de la Costa, where the Government of Venezuela has contemplated establishing a new seaport and bonded warehouse, making this the cattle-shipping port of the Caribbean coast, since it is the nearest port to the cattle center of Maracay. A highway has been built over the pass from Maracay to Ocumare (see p. 131), and American engineers are now on the ground studying conditions and making surveys and estimates for the work, which will include a railway to connect with the Ferrocarril de Venezuela at Maracay and also the development of electric power for the operation of this railway, sufficient power being available from some places in the mountains along the right of way. Recent reports show the feasibility of changing the present location from Ocumare to the Bay of Turiamo, just to the west, where it is



FIG. 11.—"LACTUARIO" (CREAMERY) AT MARACAY.



FIG. 12.—PORT OF OCUMARE DE LA COSTA.

said no dredging work will have to be done and the natural features of the harbor are better.

PORT OF OCUMARE DE LA COSTA.

The town of Ocumare de la Costa, so called to distinguish it from that of Ocumare del Tuy, south of Caracas on the Tuy River, has a population of about 3,000 and is located inland from the harbor, about 20 miles east of Puerto Cabello. Considerable cacao is grown in the neighborhood, up the deep small valley, at the mouth of which the place is situated, 6 kilometers from the port and on the road to Maracay. There is also a mule trail leading to Puerto Cabello along the coast.

Upon the completion of the work on the road from Maracay, an Executive decree of December 19, 1916, ordered the construction of an aqueduct for the town and of a pier at the port, the plans for which called for 25 meters (1 meter=3.28 feet) of concrete approach work and 88 meters of wooden pier, 6 meters wide on top, 2.4 meters above high-water level, and giving a depth of water of 5.18 meters at the end of the structure. Piling is of creosoted pine, 32 feet long and 12 inches in diameter. The work was completed in December, 1918, the pier being 150 meters long and 10 meters wide on top, carrying a small track and hand car, two wing boat landings, and an open shed at the end. Reinforced-concrete loading platforms are provided, as well as a building for storage purposes. The port is administered from Puerto Cabello. During the year 1919 imports totaled 406 metric tons of general merchandise, valued at 380,970 bolivars (\$73,527), and exports totaled 506 tons, valued at 567,245 bolivars (\$109,478), consisting principally of coffee—174,219 kilos, valued at 233,113 bolivars (\$44,991)—and cacao—166,018 kilos, valued at 233,779 bolivars (\$45,119).

Traffic is by means of small schooners and launches from Puerto Cabello. One of the small cruisers of the Venezuelan Navy is always stationed at Ocumare de la Costa.

The customs officials of Puerto Cabello also have jurisdiction over the small "ports of export" of Tucacas and Chichiriviche (see p. 243).

COMMERCIAL TERRITORY TRIBUTARY TO CARACAS.

As has been said, the large importing wholesale houses of Caracas sell to all parts of the country, even competing for the trade of the interior with the importers of Maracaibo and Ciudad Bolivar. Directly tributary to Caracas are the three independent Caribbean seaports of Guanta (the port for Barcelona), Cumana, and Carupano. At all these ports the coastwise traffic is very much larger than that of direct importation, showing the service to the Caracas merchants rendered by the national coastwise steamer company, the *Compañía Venezolana de Navegación Fluvial y Costanera*, which affords a means for the distribution of merchandise imported into the country through La Guaira.

It has also been said that Caracas is the commercial and financial as well as the political center of the country. Capital is lacking in the interior and in the coast region to the east, and it is through the granting of credit that the Caracas houses are able practically to

control the trade of this region. Another factor is that of the disposal and sale of the crops of these places, which yield considerable cacao (the principal product), and coffee. Cumana ships considerable quantities of tobacco and cotton. These products are usually financed in Caracas.

Another tributary district, to a certain extent, is the island of Margarita, which may be considered as a unit separate from the three above-mentioned ports, since its industries are different, consisting of pearling, fishing, and the production of raw magnesite. The commerce of Margarita is also more independent, and considerable direct importation is done. Means of communication are, however, the same.

PORT OF GUANTA AND CITY OF BARCELONA.

About 175 miles by sea east of La Guaira is the seaport of Guanta, 18 kilometers (1 kilometer = 0.62 mile) from Barcelona, capital of the State of Anzoategui, which has an area of 43,300 square kilometers and a population of 161,703, or 3.7 to the square kilometer. The territory of the State stretches from the Caribbean coast, between Point Carenero and Barcelona, south to the Orinoco River, a distance of about 200 miles across the great llanos. The city of Barcelona has a population of about 15,000 people at the present time. It was founded by Juan Urpin in 1637 and moved to its present site in 1671. Toward the end of the eighteenth century the place had gained considerable importance on account of the demand in Cuba and the other West Indian Islands for beef cattle to feed the slaves, and for horses and mules, the north coast being very much nearer than the far-away River Plate. Barcelona's position at the point where the llanos extend right to the coast, and consequently where there are no mountains to cross, gave the city a great advantage over Cumana and other seaports, and its trade and population grew rapidly. From 1790 to 1800 the population grew from 10,000 to 16,000.

Barcelona is a town of good appearance, with many well-paved streets and a number of houses of more than one story (since there is no fear of earthquakes, such as exists at Cumana). It is situated very near the sea, but the water is very shallow and there is no harbor on account of the many shoals of sand, preventing its use by vessels of any size. The next most important center is the town of Aragua de Barcelona, with 16,000 people, situated in the interior of the State and principally engaged in the cattle trade with the coast and the Orinoco. The elevation at Aragua de Barcelona is only 365 feet above sea level, and this part of the llanos is very hot and tropical. Communication with the coast is interrupted during the summer months by the heavy rains, and there is usually a scarcity of water during the dry season for the cattle and for agriculture.

GUANTA, BARCELONA & NARICUAL RAILWAY.

The Guanta, Barcelona & Naricual Railway was built by Venezuelan capital at a cost of 5,199,745 bolivars (\$1,003,551), and was opened for traffic in 1893. In 1895 it was taken over by purchase by the Government. The total rail length of the main line is 36.41 kilometers

(1 kilometer=0.62 mile); the gauge is 3 feet 6 inches, and the weight of rail 40 pounds per yard. The maximum grade is 2.5 per cent, and the minimum curve radius 125 meters (1 meter=3.28 feet). There are six bridges, with a combined length of 265 meters. The rolling stock consists of three locomotives weighing, altogether, 60 tons; eight passenger coaches, six flat cars, and six box cars. The passenger rate is 6.66 cents per mile, and the freight rate is equal to 34 cents per ton-mile. The gross income in 1892 was 109,445 bolivars (\$21,123), and, with occasional and slight recoveries, it fell continually, until in 1913 it was only 58,625 bolivars (\$11,315). In 1915 the receipts were 103,023 bolivars (\$19,883), or 8,124 bolivars (\$1,568) less than operating expenses. The road is operated by an administrator, who also manages the Government-owned coal mines at Naricual and the pier at Guanta. Freight transported increased from 6,400 metric tons (1 metric ton=2,205 pounds) in 1915, to 15,410 tons in 1916, steadily increasing to 28,862 tons in 1919. Passenger traffic also increased from 3,635 in 1917 to 13,553 in 1919. Total gross receipts in 1919 amounted to 281,704 bolivars (\$54,369), while expenses were 271,243 bolivars (\$52,350). This increase in traffic is due to the operation of the coal mines by the Government (see p. 151).

In 1915 the Neveri River was declared open for traffic and coastwise navigation. This decision caused a great decrease in the traffic carried by the railway between the port of Guanta and the city of Barcelona, so that now the line is almost entirely dependent upon the freight charges paid on the coal from the mines at Naricual. Purchasing is through the Ministry of Public Works. The rate paid on coal from the mines was placed at 2 bolivars (\$0.39) per metric ton, according to the tariff of November 6, 1918. It was found, however, that this rate would not even cover expenses, so the rate has been increased to 10 bolivars (\$1.93) per ton. The mines and railway are under the direction of Sr. Pedro Gonzalez E., with headquarters in Barcelona.

The Government has steadily improved the entire system, two new 32-ton locomotives have been brought down, and the line has been repaired to take their weight as far as the new coal mines of "Lallorquin" and "Las Peñas," previously inaccessible by rail, except for the lightest equipment. Several new switches now enter the mines of "Gomez" and "Las Tomas," 46 coal cars have been repaired from the old equipment purchased from the iron mines of Imataca, and all old rolling stock has been put into serviceable condition—it being the plan of the Government to produce at the mines 500 tons of coal per day, and of the railway to transport 15,000 tons per month to Guanta. The sum appropriated for the railway in 1919 was 650,000 bolivars (\$125,450).

HARBOR CONDITIONS AT GUANTA—EXPORTS AND COASTWISE TRAFFIC.

The old iron pile dock at Guanta is being replaced with a new cement structure, and a cattle shipping corral (with a capacity of 1,000 head at one time) has also been completed at Guanta for the greater facility in loading cattle. Water for cattle has been provided, as well as for vessels calling at the port.

In 1919 a total of 7,974 head of beef cattle were shipped from Guanta, principally to Cuba and Porto Rico. Heavy shipments to Cuba continued in 1920. Cattle pay 1 bolivar (\$0.19) per head for corral and 1 bolivar for wharfage charges. In 1919 these revenues amounted to 15,991 bolivars (\$3,086). The Government is studying the problem of handling coal at Guanta, and there is a project for the construction of a line to La Pajita, 1 kilometer (0.62 mile) from the present dock, where the water is deep close to shore and the cars could be carried 10 meters (1 meter = 3.28 feet) above the level of the vessel lying alongside.

The old iron-tube pile pier is being reconstructed by means of concrete cylinders placed around the old piling (which was not filled with cement and soon rusted away at the water line). The deck structure is of reinforced concrete cords and concrete flooring. The cost runs about 2,000 bolivars (\$386) per linear meter, plus 500 bolivars (\$96) for the deck work. During 1918 and 1919, 65 linear meters have been reconstructed in this manner, and there remain to be completed 50 meters, on which work is actively being pushed. Steamers of 2,000 tons have loaded cattle and coal alongside. The harbor of Guanta is called the best natural harbor on the Venezuelan coast and was formerly a regular port of call for steamers of the Royal Dutch West India Mail and the Holland-American Line. French steamers call at Guanta for shipments of cacao and tobacco.

For foreign trade the port is not one of import, but only of export, and for coastwise commerce it comes under the jurisdiction of the customs of Cumana (Puerto Sucre). Carupano is a port of foreign export and import, as is also Puerto Sucre. During the year 1919 Guanta exported a total of 3,532 metric tons, valued at 1,301,050 bolivars (\$251,103), to islands in the West Indies, the principal item being beef cattle. Its coastwise shipments amounted to 8,386 tons, valued at 2,217,709 bolivars (\$428,018). Coastwise imports, cleared at Puerto Sucre and La Guaira, amounted to 1,871 tons, valued at 4,385,113 bolivars (\$846,327), consisting principally of general merchandise and foodstuffs, as follows: Foreign-made cotton goods, 1,877,423 bolivars (\$362,343); domestic cotton goods, 340,465 bolivars (\$65,710); foreign goods, not specified, 767,879 bolivars (\$148,201).

COAL FIELDS OF NARICUAL.

EXTENT OF COAL ZONE—IMPORTANT VEINS DISCOVERED.

While possibly not the largest deposits of coal in Venezuela—there being other important coal fields in the country—those of the State of Anzoategui (Barcelona) are, at the present time, the most developed and the best known. The carboniferous region of Barcelona may be said to be limited on the south by the Querecual River and on the north by the hills of Naricual. There are in this district a multitude of veins running in different directions, but generally from east to west; the greater number of them are not yet opened or worked.

The extent of this coal zone is estimated at 800 square kilometers (1 square kilometer = 0.385 square mile) by the Italian engineer, E. Cortese, and at 40 square miles by Arthur L. Pease and John Roberts, English engineers. The latter also estimated the possible production of the mines of Naricual alone at 5,500,000 tons.

Writing in 1892, T. E. Richards, then manager of these mines, stated that the quantity of coal found under the galleries is practically unlimited, and the Venezuelan engineer, Miguel E. Palacios, affirms that the Valleys of Naricual, Capiricual, and Tocaropo contain an inexhaustible supply of coal. The important veins discovered to date are:

1. Those found on the left bank of the stream of Araguaita, a branch of the Naricual River—these having been most worked. Extraction was begun at the outcroppings seen in the side of the hill by means of galleries sent in along the veins. Afterwards a more rational plan was adopted—that of a transverse gallery from north to south, cutting the veins at right angles and permitting their exploitation at the same time through one main tunnel. The thickness of these veins has been as follows: No. 1, 1 meter (3.28 feet); No. 2, from 0.50 to 1.20 meters; No. 3, from 1 to 2.80 meters; No. 4, as much as 3.10 meters; No. 5, 1.25 to 2 meters; No. 6, very uneven in its thickness; average thickness of all veins of the Araguaita, 1.20 meters.

2. To the west of these veins, in the place called "Cerro Grande," another vein was opened near the railway line for easy transport.

3. Near the course of the stream Simplicio, about 1,500 meters from the Araguaita, three workings were opened, and from this place has come the best quality of coal, the veins running from 2.10 to 2.60 meters in thickness.

4. In all the district there are numerous outcroppings of coal, many of which have been worked from the surface to some extent, that of "Las Peñas" producing a considerable quantity of good coal. All of these mines belong to the National Government, which formerly rented them to private enterprises, but now operates them for its own account under the direction of the Ministry of Public Works. The railway also now belongs to the Government, as well as the port works of Guanta.

ANALYSIS AND CHARACTERISTICS OF NARICUAL COAL.

Following is an analysis of the Naricual coal:

Years.	Authority.	Mines.	Water.	Volatile.	Carbon, free.	Ash.	Sulphur.
			<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
1874....	G. E. Barher, Sheffield.....	Naricual....		31.00	63.50	4.5	0.68
1890....	School of Mines, Paris.....	Araguaita....	10.20	39.80	48.00	2.00	.....
1890....	do.....	do.....	6.00	43.00	45.00	6.00	.....
1890....	do.....	do.....	5.50	43.90	47.60	3.00	.....
1892....	M. E. Palacios, engineer.....	do.....	1.72	31.12	65.10	1.63	.43
1901....	E. Cortese.....	do.....	1.25	38.63	58.49	2.83	.....
1907....	National Laboratory.....	Araguaita....	.95	35.26	62.02	1.77	.98
1913....	Oscar A. Machado.....	Las Peñas....	1.10	36.17	59.03	3.70	1.90

The characteristic of this coal is its high volatile content, causing it to burn very easily and with a long flame. The amount of fixed carbon varies between 45 and 66.25 per cent, being lower than that of some of the imported coals coming into the country. The vein called "Simplicio" produces the best amount of fixed carbon. In the exploitation of these mines there is produced about 33 per cent of lump coal and 67 per cent of fine coal mixed with dust, making the

use of briquetting machines necessary in order to utilize the coal dust in mixture with asphalt. As the depth of the mines is increased, the percentage of sulphur diminishes and that of fixed carbon becomes correspondingly greater. Upon passing through a distillation process, the coal of Barcelona leaves in the retorts a large quantity of coke of good quality, not too compact and making a very good fuel. The production of gas is very considerable.

Samples of the different veins of this coal district tested for caloric value in the School of Mines of Paris, and by various engineers, show results of 8,256 to 9,303 calories per pound.

The Barcelona coal is called a bituminous lignite, of good quality and resembling the best long-flame coals from relatively modern formations of the Tertiary period.

COST PER TON, PLACED ON BOARD AT GUANTA.

The cost of 1 ton placed on board at Guanta is calculated, at present, as follows (1 bolivar=\$0.193 at par):

	Bolivars.
Mining extraction.....	2.75
Sorting.....	.80
Mine transport.....	2.00
Loading cars (mine cars).....	.20
Mine transport to main outlet.....	.95
Portable railway to railway.....	.20
Lighting mine.....	2.00
Pumping of mine water.....	.20
General expenses.....	.75
Administration.....	2.60
Transport by rail to Guanta.....	3.00
Loading vessel, Guanta.....	2.00
Total.....	17.85

The construction by the Government of new switch lines directly from the railway to the mouth of the main galleries, the use of the hopper cars brought from Imataca in 1917, and the general repair of the railway and the installation of better loading methods at Guanta will greatly lower the cost of production and delivery of this coal at seaboard.

COAL MINES AT UNARE.

Mention should also be made of the coal mines located at Unare, on the right bank of the Unare River, 120 miles east of La Guaira and about 15 miles west of the mines of Naricual. The mines are described as being 5 miles from tidewater, with a minimum depth of 14½ feet of water in the river. About 20 tons per day have been delivered at Puerto Unare.

FORMATION OF NARICUAL FIELDS.

An American engineer and coal expert inspected and investigated the coal fields of Venezuela in 1914. Of the Naricual fields it was said that the formation was schist, shale, and sandstone, the coal being of characteristic high volatile percentage, light ash, and low sulphur content. The analysis is as follows:

	Per cent.
Volatile.....	25.07 to 43.90
Ash.....	1.63 to 6.20
Sulphur content.....	.43 to 2.16
Free-carbon content.....	45.00 to 66.12

The prevailing formation is described as follows: The coal mines of the Naricual Basin are situated about 12 miles south of Guanta at Las Penas. Coal measures consist of alternating beds of sandstone and clay schists, folded and tilted in such a way as to be perpendicular in many places. The chief sandstone beds are formed of quartz grains and feldspar, with clay binding medium—others being micaceous, containing iron oxide, while still others are of fine-grained, hard, gray quartzite. The schists are of two kinds—one being argillaceous, very friable, dark greenish gray in color, and crossed by thin beds of clay containing lumps of iron oxide, and the others being strong and light brown in color. Each coal seam is inclosed between beds of schist serving as a roof or floor. The strike is in a general easterly direction; the dip is southwest and varies between 50° and 80°, the angle made with the horizontal diminishing as the distance from the coast increases. The sulphur is within permissible limits and lower than in some Pittsburgh coals, which contain as high as 5.88 per cent. The caloric value (Gontal formula) is 7,900 to 8,400 and the British thermal units 14,720 to 14,113 per pound. This grade of coal can be used for quick steaming, puddling iron, pottery kilns, etc. The chief drawback is the extreme friability, almost 90 per cent crumbling to a powder.

At Guanta there is a plant for making 100 tons of briquettes per day. The briquettes cost, delivered at Las Penas, 16.60 bolivars (\$3.35) per ton, and, delivered on board vessels at Guanta, 21.60 bolivars (\$4.16) per ton. The total production up to 1919 had been about 20,000 tons per annum.

OFFICIAL REPORT ON MINES OWNED AND OPERATED BY GOVERNMENT.

In the Memoria del Ministerio de Fomento, 1920, pages 233 to 253, inclusive, is given a complete report on the condition, production, and equipment of the Naricual Basin coal mines, owned and operated by the Venezuelan Government. There are cross-section drawings of the workings of the various veins, as well as many views of the mines, locations, etc.

The total production for 1919 was 25,559 metric tons (1 metric ton = 2,205 pounds), against 23,316 tons for 1918. The cost of coal placed on board at Guanta varied between 28.70 and 23.11 bolivars (\$5.49 and \$4.46) during the year, with an average cost of 24.59 bolivars (\$4.75). The predicted cost f. o. b. vessel at Guanta for 1920 was 29 bolivars (\$5.60) per metric ton. The railway now receives 10 bolivars (\$1.93) per ton for freight on coal from the mines to Guanta, allowing the railway a surplus, even though the cost of the coal is increased at Guanta.

During 1919, in the seven veins being worked by the Government, a total of 26,037 cubic meters of coal were blocked out for future extraction, as compared with 22,096 cubic meters during 1918. In the "Gomez" vein 11,000 meters of coal were lost by fire. There was an accumulation of 7,986 tons of coal at Guanta in October, 1919.

Sales to the National Government at cost during 1919 amounted to 4,584 tons, valued at 116,281 bolivars (\$22,442), and to private parties 15,909 tons, valued at 592,303 bolivars (\$114,314). Present prices are: For mine run, 50 bolivars (\$9.65) per ton; for lump coal, 60 bolivars (\$11.58) per ton. During the last four months of 1919,

1,437 tons of briquettes were manufactured at an average cost of 75 bolivars (\$14.47) per ton and sold for 90 bolivars (\$17.37)—since increased to 100 bolivars (\$19.30)—per metric ton. Profits on coal in 1919 were 150,992 bolivars (\$29,141), against 84,355 bolivars (\$16,281) for 1918. The total capital investment of the Government in the mines of Naricual, Capiricual, and Tocaropo is 1,503,779 bolivars (\$290,229), including the railway and docks at Guanta, the mines being represented by 471,833 bolivars (\$91,064). Returns show a profit of 10 per cent for the Government on the investment. The increased production of coal and the manufacture of briquettes automatically increase the net profit per ton.

Experiments in the manufacture of coke have given a very good product on a small scale, but not on a large scale when this has been attempted, the product in the latter case being of uneven quality and otherwise unsatisfactory on account of poor equipment.

New machinery brought from the abandoned iron mines of the Canadian-Venezuelan Ore Co. at Imataca, inventoried at 758,098 bolivars (\$146,313), include four 250-horsepower boilers, one 500-kilowatt generator (steam turbine), two electric winches of 150 horsepower each for overhead cable system, 265 coal wagonettes of $\frac{3}{4}$ cubic meter capacity each, two air-compressor plants, 10 kilometers (1 kilometer=0.62 mile) of portable track, a steam prospecting drill outfit, and much other useful material and equipment for mining on a large scale.

With this new equipment for mining, the Ministry of Fomento has made plans for the production of 500 tons per day, or between 12,000 and 15,000 tons per month delivered at Guanta for sale. Workings will be increased to 10, of 100 tons daily production each; the electrical machinery will be installed for power development and transportation to the railway by means of the cable; a new modern briquette plant of 20 tons per day will be purchased and installed; the railway from the mines to Guanta will be completely overhauled to transport 15,000 tons per month to the port; modern coal-loading equipment for vessels will be constructed at Guanta; and vessels will be purchased for coastwise transport, the auxiliary-powered schooner being recommended as a good type. The total estimated expenditures amount to 4,075,000 bolivars (\$786,475).

COAL DEPOSITS OUTSIDE OF NARICUAL BASIN.

In the country to the east of Barcelona and throughout the Paria Peninsula there are numerous outcroppings of coal. Many of these have been prospected from time to time, and several concessions have been given by the Venezuelan Government for their exploitation; but, except at the Government mines at Naricual, little has been done, concessions mainly being offered for sale to foreign companies, etc. This part of the country has also been prospected and explored for petroleum by the General Asphalt Co., owner of the asphalt deposits that lie farther south and east at Bermudez. The most important of these coal deposits outside of the Naricual Basin appear to be those of the municipality of El Pilar, south of Carupano, Benitez district, State of Sucre, south of the main range of the mountains of the peninsula of Paria. On November 7, 1917, the Venezuelan Government, through the Ministry of Fomento, gave a contract to

Sr. Elias Rodriguez Gonzales for two coal mines in this district, the concessions covering 200 hectares (1 hectare=2.47 acres) each and being called "Santa Ana" and "Santa Rosa," respectively. Six months from date of contract were allowed for the survey and mapping of the ground ceded and three years for operations to begin. The conditions of contract allowed the payment of 1,000 bolivars (\$193) for each claim for an extension of time for two years more after the expiration of the first period of three years if the mines were not put in operation in that time. The Government was to receive a royalty of 2 bolivars (\$0.386) per ton extracted, with the minimum royalty placed at 1,000 bolivars (\$193) for the first year and 2,500 bolivars (\$482) for each year thereafter. The contractor was obligated to sell to the Government all coal needed at 20 per cent under the market price at the time of sale. The total duration of the concession was 30 years and the cash deposit 10,000 bolivars (\$1,930). These properties have not been actively exploited as yet.

GENERAL DESCRIPTION OF "ORIENTE" TERRITORY.

The city and port of Cumana is the capital of the State of Sucre, of which Carupano is also a seaport farther along the coast to the east. The State of Sucre covers all of the peninsulas of Paria and Araya and takes in the main body of the eastern Coast Range, which extends from near Barcelona along the coast to the end of the peninsula of Paria. The topography of mountains and foothills is varied by the Gulf of Cariaco, lying between the peninsula of Araya and the mainland and the great lowlands and swamps at the eastern end of the gulf. A few miles off the mainland to the north are the islands of Margarita, Coche, and Cubagua, all of which are inhabited and of considerable importance in pearling, fishing, and mineral production. These islands, however, do not come under the administration of the State of Sucre, but are directly subordinate to the National Executive.

The entire region is an interesting one for the geologist and naturalist. Almost every known formation is found; there are great caves, hot-water springs, and rare bird and animal life. Humboldt and Codazzi spent considerable time in this district, which has also been visited by more modern explorers and scientific men.

The principal elevations of this division of the Coast Range are: Pico Turumiquire, 2,600 meters (1 meter=3.28 feet); San Bonifacio, 1,500 meters; Cerro Purgatorio, 1,550 meters; and Tataracual, 1,460 meters. The main range lies along the coast and the peninsula of Paria; but, like the Coast Range in the region of Caracas, it is also divided into two sections called the "Serrania Costanera" and the "Serrania Interior," the division for this eastern range being formed by the Gulf of Cariaco and the long, low extension toward the southeast of the lowlands and swamps of Cariaco, terminating in the lagoons of Campoma and Putucual. The Serrania Interior is of less average height than the line along the coast, and contains numerous small, rich valleys, where coffee, cacao, tobacco, and other products are grown on a small scale, but in the aggregate of considerable importance. The State line along its southern boundary (with the State of Monagas) follows this line of hills or interior division of the Coast Range, the average elevation being about 2,000 feet above sea

level. On their southern slopes these hills present many opportunities for agricultural development, with abundant watercourses, etc., and the plains farther south toward Maturin, in the State of Monagas, present a more pleasant prospect than any other region of the great llanos of Venezuela.

In Venezuela the term "Oriente" is used to describe the entire eastern part of the country, including the delta of the Orinoco and the territory of Ciudad Bolivar. Commercially, however, the division is different. Ciudad Bolivar and the delta country form a separate and distinct unit, while the Caribbean coast country properly belongs to Caracas when considered commercially, there being little connection with Ciudad Bolivar, except a small commerce from the eastern end of the peninsula of Paria by way of Port of Spain, Trinidad. Maturin, center of the State of Monagas, trades with Carupano and Trinidad by water through the Cano San Juan and the Golfo Triste, transportation being by small schooners.

Separated from the islands of Cubagua and Coche by a few miles of shallow water is the peninsula of Araya, south of which lies the Gulf of Cariaco, a long east-and-west arm of the sea, open to the west and terminating on the east in great swamps and lagoons. At the entrance, on the mainland, is located Cumana, capital of the State of Sucre, named after Mariscal Sucre, whose birthplace was Cumana. The town was founded in 1520 and owed much of its early progress to Bartolomé de las Casas, the Spanish priest who did so much for the freedom of the Indians in South America in old colonial times. Many earthquakes have played an important part in the city's history. The town is connected with the port by half a mile of road across sand flats; there is also a tramway operated by animal power. The shallow Gulf of Cariaco extends for about 50 miles to the east.

At the western end of the peninsula of Araya is the site of the old castle of Araya, built at the suggestion of Las Casas for the preservation of peace between the Indians of the mainland and the Cubaguans who had made Nueva Cadiz on Cubagua Island the center of the Caribbean slave trade before the town and fortress were totally destroyed by an earthquake and tidal wave in 1543.

On the peninsula are also extensive "salinas," or salt pits, owned and operated by the Government. Oil seepages and springs have been found, but no petroleum in paying quantities, though the territory has been recently prospected with drills by an American company. The salt produced is second in quantity and quality only to that of Coche and is said to amount to about 6,000 tons or more per year.

Cumana, built on the banks of the Manzanares River, is famous for its fruits, principally pineapples, grapes, and mangoes, and in the less fertile hills back of the town are grown cacao, the principal product of the region, some coffee, etc. The principal exports are coffee, cacao, hides, tobacco, sugar, and beans, though only coffee, cacao, and hides are sent abroad. Most of the produce is carried along mountain trails to Puerto Sucre, as the port is called. The main route from the interior follows the Manzanares River for most of its course, but the last few leagues lie over a steep ridge. The upper valley of the Manzanares has some beautiful scenery, as the gorge is followed through limestone hills until the town of Cuma-

nacoa is reached. Fifty miles from Cumana to the south and east there is little habitation or production, and the coastal region is said to be fit for only cotton, fiber, and coconut cultivation.

Around Cumanacoa there are fertile hillsides and rich alluvial flats, chiefly devoted to coffee, sugar, or beans. This town was founded by Domingo de Arias in 1717 and named San Baltazar de las Arias. Above Cumanacoa the valley narrows into a gorge running up into the mountain mass on the borders of Sucre and Monagas, the watershed forming the boundary line between the two States. Twenty-five miles south of Cumanacoa is the town of San Antonio—in Humboldt's time a flourishing mission center. Four or five miles to the southeast lies the Caripe Valley, famous for its tobacco and for the Guacharo cavern so well described by Humboldt, through which runs underground the Rio Caripe. Thirty miles from San Antonio, at Aragua de Maturin, the edge of the hills is reached and the llanos begin. To the northeast there lies a great stretch of little known and sparsely inhabited country, consisting chiefly of forest-clad hills; this region is capable of supporting millions of cacao trees, but there is no population worth mentioning. Near Punceres there are petroleum springs, and in this region there are many indications of oil, which may some day lead to development. To the east is the old port of San Juan of colonial days, with a depth of water in the "caño" of the same name sufficient for sailing craft and steam vessels of considerable size (5,000 tons up, at asphalt-loading port of Guanoco) and used by the commerce of Maturin. Most of the produce for export from the northern part of Monagas and the southern part of Sucre passes across the steep divide over the trails to Cumana and Puerto Sucre.

The famous asphalt lake of Bermudez lies just north of the Cano, San Juan, at Guanoco, in the State of Sucre. These deposits are owned by the General Asphalt Co. They were once thought to be larger than those of the Pitch Lake in Trinidad, but, though the visible area is larger, it has since been found to be less in thickness (depth). The quality is better than that of Trinidad.

The principal port of Oriente is Carupano, on the north coast, midway between the two peninsulas of Paria and Araya. The town, seen from the steamer, appears to lie huddled up at the foot of the steep mountains much like La Guaira, but in reality it stretches up the small valleys of two streams which here flow into the sea. Its position makes it very hot. A trail comes down across the mountain, over which passes the cacao for which Carupano is famous, as well as some cotton, sugar, and alcohol. The "white rum" of Carupano is well known throughout the country. The population is about 11,000, and there are potteries of considerable local and coastwise importance, small rope factories (using the fiber of the agave growing on the semiarid mountain slopes about the town), and some industry in the making of nets, soap, etc. Sulphur and (it is said) gold-bearing quartz are found near by, but no systematic effort has ever been made to work these minerals.

About 10 miles east of Carupano is the small port of Rio Caribe, a port of export only and dependent upon the customs administration of Carupano. Vessels have to lie in the open roadstead with no shelter, and traffic is by means of small schooners which take away

the cacao produced in the hills back of the port. Beyond Rio Caribe is the peninsula of Paria, a beautifully wooded mountain range rising from the water's edge and separated from Trinidad only by a narrow strait with numerous islands. The northern side of the peninsula is little inhabited, but the coast facing the Gulf of Paria on the south has several small settlements, chiefly engaged in the cultivation of cacao and the cutting of timber, their produce being shipped to Trinidad.

Cristobal Colon is the most easterly port of Venezuela, and its position at the extreme eastern end of the peninsula of Paria, opposite the delta of the Orinoco, led former President Castro to believe that a small expenditure of public money would lead to the diversion, from Trinidad to Venezuela, of all the freight now passing via Port of Spain to Ciudad Bolivar. This was an ill-founded hope, however, as events proved, for the harbor is a very poor one, open to a continual heavy swell coming in through the "Bocas"; this difficulty could be overcome only by extensive harbor works, the cost of which is unwarranted by the circumstances. The wharves and warehouses erected represent a sacrifice of public money.

[The above "general description" has been taken, in part, from the chapter entitled "In the Oriente," in "Venezuela," by L. V. Dalton, pp. 181-189, and has been inserted in order to convey a good general idea of the eastern coast of Venezuela, which is commercially tributary to Caracas by reason of the coast-wise steamer service and coasting trade.]

ROADS AND HIGHWAYS OF CUMANÁ-CARUPANO DISTRICT.

There are no railways in this district other than the short line at the asphalt mines of Guanoco in the State of Sucre, 15 kilometers (1 kilometer=0.62 mile) long, connecting the asphalt deposits with the river port on Cano San Juan, and another line, 3 kilometers long, at the asphalt mines of Guanipa in the State of Monagas.

The Barcelona-Soledad Highway has been surveyed as far as Soledad (across the river from Ciudad Bolivar), a total distance of 360 kilometers. This new highway will eventually put Barcelona and the seaports of Guanta, Cumana, and Carupano, with their connections, in touch overland with the commercial center of the Orinoco country, Ciudad Bolivar. The road is now newly repaired and rebuilt (over the old one built during Guzman Blanco's administration) as far as San Mateo, at kilometer 58, and is expected to reach Aragua de Barcelona next year.

This road was badly planned in the beginning and has suffered constant damage from floods, which have rendered it almost useless as a highway. The ground covered is low, and at Marin and Flores floods have repeatedly interrupted traffic in the past. It is being relocated throughout most of its extent and provision is being made to take care of flood waters during the rainy season. Its opening for traffic will greatly help the commerce of the llanos to reach tide-water at Guanta and will prove a welcome stimulus to trade in Barcelona.

The Cumana-Cumanacoa Highway is under construction, via Puerto de la Madera on the Manzanares River, to the soda mines of Los Ipures (kilometer 20) and on to San Fernando and Cumanacoa, a total distance of 56 kilometers. The Manzanares River has been

canalized at the point called "Bebedero," near Cumana, to prevent flooding. At the end of 1919 22 kilometers had been completed and opened to traffic as far as Montes, and the work is being pushed by the States, assisted by the National Government. The sum allowed by the treasury is 1,000 bolivars (\$193) bimonthly.

The *Carupano-Cariaco Highway* is under construction and repair. By the end of 1919, 40 kilometers had been completed in the district of Rivero, and 20 kilometers of mule trail had been repaired from Cariaco to Rendon. This highway crosses the ranges to El Pilar and then strikes due west to the town of Cariaco, which is located on the shores of the Gulf of Cariaco.

Another highway is under construction from Rio Caribe to Yaguaparo, across the difficult Coast Range. This will eventually put the Caribbean coast in direct communication with the Gulf of Paria. Twelve kilometers had been completed by the end of 1919. Another connecting local road is that from Carupano to Rio Caribe, on which 5 kilometers have been completed.

The *Maturin and Cano Colorado Highway* is also under construction, the total distance being 38 kilometers. Trade with Maturin has been by schooners from the sea up the Cano San Juan to the point where the Rivers San Juan and Guarapiche join, this being the customs station. The San Juan leads to Guanoco, where are the Bermudez Lake asphalt deposits of the General Asphalt Co. A few miles up the Guarapiche is the village of Cano Colorado, and Maturin lies about 30 miles away across country, though the distance is much farther by the river, up which freight is transported in "bongos" (large dugout canoes) by poling. The river is narrow and swift, the journey taking three days upstream. A trail leads across the plains to Ciudad Bolivar and Barrancas on the Orinoco River, crossing some of the best cattle country in Venezuela.

PORT OF CUMANA.

DEVELOPMENT—POPULATION—INDUSTRIES.

The present States of Sucre, Anzoategui, and Monagas were called by the Spaniards Nueva Andalucia, and Cumana, founded in 1520 by Gonzalo de Ocampo, was the first city in South America and the capital of the new Province. Its site was changed several times, but it was finally definitely located in its present position by Diego de Serpa in 1569 and was called Cumana, its previous name having been Nueva Cordoba. Earthquakes in 1756, 1794, and 1797 almost totally destroyed the place, and shocks were again experienced in 1812 and 1853, when little remained of the original structures of the town.

The population is 15,000, and the industries consist of coffee, cacao, brown sugar ("papelón"), tobacco, rum, coconut oil, divi-divi, cotton goods, dried fish, and furniture made from the fine native woods.

The National City Bank of New York maintains an agent in Cumana, and it is a port of call for several of the European steamship lines.

The principal factories are the Telares é Hilanderías Orientales, capital 3,000,000 bolivars (\$579,000), established in 1910, and the Industrial de Manzanares, capital 2,000,000 bolivars (\$386,000), es-

established in 1912 and manufacturing coconut oil, coconut-fiber products, and cottonseed oil. This latter factory is very modern in every respect, and has a daily capacity of 3 tons of coconut oil, 6 tons of cottonseed oil (refined product), and a large production of 13 grades of coconut fiber for export. The buildings are all of steel-frame, reinforced concrete, and the equipment consists of a Crosby Gas Producer engine driving a 100-kilowatt, three-phase generator, alternating current, 240 volts, at 900 revolutions per minute. A transformer of 2,400 volts sends current to the plant at 240 volts. The power plant is located in the plant of the Telares Orientales.

Seventy-two per cent of refined oil is obtained from the copra.

The presses were made by Robert Middleton, of Leeds, England—8,840 pounds to the square inch—run by a 60-horsepower motor. Driers handle 500,000 nuts. The coco-butter canning plant was made by a company in Richmond, Va. Cans are made of $\frac{1}{4}$, $\frac{1}{2}$, 1, $2\frac{1}{2}$, 5, 7, and 10 kilos each for shipment, and 1,000 cans of the various sizes can be produced every working day of 10 hours. The cottonseed-oil mill makes a grade similar to the "Summer Yellow" brand, well known in the United States. Six tons of cotton seed can be worked daily. One hundred kilos produce 40 kilos of chaff and waste, 45 kilos of oil cake, and 15 kilos of oil, the seed costing 6.50 bolivars (\$1.25) per 100 kilos. The plant is lighted throughout by electricity. This is one of the largest industrial plants in Venezuela.

The cotton factory uses locally produced cotton, the district being the second most important cotton-producing center of the country—next to that of Valencia, in Carabobo. In 1918, 280 tons of clean cotton were produced, or 14 per cent of the total production of the country. The lowlands to the east are very well suited to cotton, according to all reports, and the industry is capable of greater expansion if more labor becomes available and better methods are employed.

CUMANA & CARUPANO PIER & TRAMWAY CO.

The Cumana & Carupano Pier & Tramway Co., with a capital of \$500,000 and registered in New Jersey, owns and operates the piers and lighthouses at Cumana and Carupano, the electric-light plant and tramway at Carupano, and the sawmill in the latter city.

In 1919 the company handled a total of 5,842 metric tons (1 metric ton=2,205 pounds) of coastwise freight at Cumana, 5,831 tons at Carupano, 212 tons of imported freight at Cumana, 557 tons at Carupano, 1,102 tons of exports at Cumana, 4,397 tons at Carupano, and 40 tons of passengers' baggage at Cumana and 180 tons at Carupano. The lighthouses at Cumana produced in revenue 4,650 bolivars (\$897) and at Carupano 5,329 bolivars (\$1,028), making the total receipts of the company 266,694 bolivars (\$51,472) for the year. The Carupano electric railway carried a total of 224,929 passengers during 1919, producing a gross return of 56,232 bolivars (\$10,853) and 3,844 tons of freight between the city and the pier, at 4,849 bolivars (\$936).

Exports to foreign ports from Cumana included 987 tons of coffee, 86 tons of hides, and 6,000 coconuts; imports included 121 tons of general merchandise, etc. Carupano exported to foreign ports 2,984 tons of cacao, 1,204 tons of coffee, 36 tons of hides, 65 tons of corn, 98 tons of tobacco, and imported 493 tons of general foreign merchandise.

Coasting-trade receipts at Cumana included 628 tons of general merchandise, 165 tons of cement, 302 tons of cotton, 316 tons of salt, 400 tons of corn, etc. Coastwise exports included 10 tons of cacao, 548 tons of coffee, 232 tons of merchandise, 441 tons of tobacco, and 193 tons of foodstuffs.

Coastwise exports from Carupano included 636 tons of cacao, 91 tons of coffee, 1,026 tons of merchandise, and 73 tons of corn. Receipts included 1,780 tons of general merchandise.

The above figures are given to show the large distribution of goods of foreign importation from Caracas to the eastern coast towns of the country.

HARBOR AND PORT WORKS OF CUMANA.

The lighthouse, harbor, pier, and tramway concession for Carupano and Cumana was given by the Venezuelan Government in April, 1906, to Miguel A. Mendoza, who, on November 9, 1906, transferred his rights to Sr. Jesus Ma. Iturbe, who, in turn, transferred his rights to the Compañía Anónima Muelle de Puerto Sucre y Carupano in April, 1907. In 1910 this company transferred its rights to the Cumana & Carupano Pier & Tramway Co., registered in New Jersey and capitalized at \$500,000. All transfers were with the prior consent of the Government.

The obligations on the part of the company were as follows: To construct at Puerto Sucre (Cumana) a pier of wood and iron, 250 meters in length, for facilitating the handling of ocean cargo at the port, and to have a covered shed at the end, equipped with all necessary appliances for the purpose indicated. The Government obligated itself as follows: Not to construct another pier or similar work at Puerto Sucre, or to give another concession for a like purpose to any third party; not to tax the company in any manner, except for the national stamp tax, and not to require it to pay municipal or State taxes; to cede necessary lands, using the right of expropriation, if necessary; to permit the free importation of machinery, materials, and equipment for the use of the company; and to exempt from all military or police duty the employees of the company.

The company enjoys the exclusive right, during 40 years from the date of contract, to the exploitation of the pier, according to the following tariff (1 bolivar=\$0.193):

	Bollvars.
Merchandise, baggage, products of the country_per 100 kilos_	1. 50
Lumber, minerals, pottery products_-----do_	. 40
Cattle, horses, and mules_-----per head_	2. 00
Burros_-----do_	. 50
Hogs and goats_-----do_	. 25
Passengers:	
First class_-----per person_	2. 00
Second class_-----do_	1. 50
Other classes_-----do_	1. 00
Vessels using pier—Pier and lighthouse tax_-----per ton_	. 10

Vessels using the pier for repairs pay according to arrangement. Packages weighing more than 1,000 kilos pay double rates. The company may invoke the aid of the Government in the collection of rates, even though the pier was not used, if the matter is within the jurisdiction of the customs authorities of Puerto Sucre.

The pier at Cumana is of wood, 251 meters long by 5.40 meters wide (1 meter=3.28 feet), the head terminating in a platform 15.60 meters square, roofed and equipped with boat stairs for the use of passengers. The piling is of native wood throughout, principally of "guatacare," as this is known to offer the best resistance to the attacks of the "toredo." Piles are tied together with diagonal iron-rod bracing.

The calm waters of the bay permitted the driving of the piling with a floating pile driver, penetration in the sand being on an average of 3.5 meters. The total number of piles is 550, from 14.7 to 30 feet in length and from 7.8 to 10.5 inches in diameter. The longitudinal stringers are of American pitch pine, as are also the crosspieces and the decking. All spikes and bolts are of galvanized iron. The berth space at the end of the pier gives an average of 5.2 meters of water at mean low tide, sufficient for the docking of coasting steamers and sailing vessels using the port.

The lighthouse, located at the land end of the pier, at 10° 27' 40" north latitude and 2° 44' 8" west longitude, has a base 4 meters square and is 21.2 meters high, the material being steel, set in a concrete base. The height of the light itself is 24 meters above sea level.

The warehouses cover 440 square meters of floor space, being of wood with concrete floor and metal tile roof.

Freight-handling equipment consists—together with the usual complement of blocks, screws, cables, etc.—of three cars, with a capacity of 2.7 metric tons each, running on rails laid from the end of the pier to the customs warehouses; a railcrane, operated by hand power and capable of raising 4 tons at 20-foot boom radius; two passenger boats, with a capacity of 15 persons each; and four freight lighters, with a capacity of 3 to 5 tons each.

The harbor, little better than an open roadstead, and very shallow, is protected from the prevailing northeastern ocean swell by the projection of the Araya Peninsula and the island group of Margarita, Coche, etc. The town itself is located on the banks of the Manzanares River about half a mile from the port and pier, communication being over a sandy, low road, at the side of which runs a tramway operated by mule power. To the east extends the shallow Gulf of Cariaco, which ends at the town of Cariaco, soon to be connected with Carupano by the new wagon road. There is excellent tobacco and cotton land along the shores of this bay, and there are a good many settlements and small towns along its southern shore. The district is one of considerable promise for the future if the problem of labor in the tropical climate can be solved.

NAVIGATION—IMPORTS AND EXPORTS.

During the year 1919 7 Dutch steamers, 1 American steamer, and 1 British steamer called at Puerto Sucre with cargo from foreign ports, as well as 48 Venezuelan sailing vessels of small tonnage. Vessels loading were: French, 6 sailing vessels, with a total of 300 tons; Dutch, 12 steamers, with a total tonnage of 18,688; British, 3 steamers and 2 sailing vessels, with a total tonnage of 6,516; Venezuelan, 46 sailing vessels, with a total tonnage of 1,107; total, 69 vessels, with a total tonnage of 21,611.

Puerto Sucre (Cumana) imported during 1919 a total of 508,084 kilos of foreign merchandise and materials, valued at 283,689 bolivars (\$54,752), as follows: From the United States, 199,530 kilos, valued at 191,918 bolivars (\$37,040); Trinidad, 236,421 kilos, valued at 75,105 bolivars (\$14,495); Curaçao, 64,317 kilos, valued at 8,198 bolivars (\$1,582); Martinique, 7,500 kilos, valued at 7,475 bolivars (\$1,443); Netherlands, 316 kilos, valued at 994 bolivars (\$192).

During the year 1919 Puerto Sucre (Cumana) shipped 196 tons of fertilizer to Barbados. To the United States it exported 58,964 kilos of hides, valued at 232,371 bolivars (\$44,848); 137,833 bolivars (\$26,602) worth of goatskins; coffee valued at 75,000 bolivars (\$14,475); and other small items, making a total of 467,957 bolivars (\$90,316). France took 959,150 kilos of coffee, valued at 1,970,897 bolivars (\$380,383). Martinique took 443 tons of fertilizer (bat guano) and a few other small items. Trinidad took a total of 154 tons, valued at 57,587 bolivars (\$11,114), consisting principally of foodstuffs.

PORT OF CARUPANO.

HARBOR AND PORT WORKS.

The harbor at Carupano is practically an open roadstead, unprotected from the heavy swells from the northeast except for a short land projection just to the east of the site of the present pier. Unlike the condition at Cumana, the bottom of the bay at Carupano is hard in places, making it impossible for driven wooden piling to attain sufficient penetration to withstand the action of the sea. The present pier structure is of steel screw piling, and its construction under the conditions existing at the port required considerable study and engineering ingenuity.

The original contract for the pier and port works was given in January, 1907, by the Venezuelan Government to Sr. Julio Bescanza, who transferred his rights to the *Compañía Muelles de Puerto Sucre y Carupano* in July, 1907. In March, 1911, transfer was made to the *Cumana & Carupano Pier & Tramway Co.*, already mentioned in connection with Cumana.

The obligations on the part of the company holding this contract were as follows: To construct at Carupano a 250-meter pier of steel (1 meter=3.28 feet), with wooden deck, equipped with covered shed at sea end and with all modern and necessary devices for the service of vessels handling cargo at the port, as well as fresh-water piping sufficient for the needs of vessels calling; also to construct a steam tramway (afterwards changed to electric power) connecting the pier with the customhouse and town of Carupano.

The tariff is the same as for the pier at Cumana, with the addition that each passenger to or from the city to the customhouse pays 0.25 bolivar (\$0.048) per person and freight 0.25 bolivar per 100 kilos of weight (1 kilo=2.2046 pounds).

The contract calls for lighting and power service for Carupano, public lighting, including 20 arc lights of 1,200 candlepower and 60 lights of 100 candlepower during 11 hours of the night. Payment by the municipality is 67 bolivars (\$12.93) per day, guaranteed by two

municipal rents of revenue. Private service is at the rate of 5 bolivars (\$0.96) per month, with a charge of 6 bolivars (\$1.16) for installing each light, plus the value of the materials used in such work on the premises. The duration of the electric lighting contract is 50 years from July 5, 1913.

The cost of the Carupano and Cumana pier, tramway, and light-house works has been:

Steel pier at Carupano, warehouses, and equipment.....	\$179,896
Auxiliary pier of wood, lighthouse, land, etc.....	20,000
Wooden pier at Cumana, warehouse, cars, and all equipment.....	76,404
Price paid for cession of contracts.....	223,700
Additional cost to complete Carupano pier.....	6,054
Electric plant, lines, buildings, etc.....	74,821
Electric street-car lines, plant, buildings, etc.....	50,584
Sawmill and machine shop.....	6,463
Total.....	637,922

The length of the Carupano steel screw pile pier is 250 meters (1 meter=3.28 feet) by a general width of 5.15 meters, with two cargo decks or platforms, each 20 meters in length by 15.15 meters in width, the first being 145 meters from shore and the other at the sea end of the structure. Each cargo deck is covered by a shed with steel frame and iron roof. The entire structure of this pier is divided into 50 sections of 5 meters each from pile center to center and 4.5 meters transversely. The weight strain is estimated at 2,000 kilos—2 metric tons—per square meter of deck surface. Pile caps are of cast steel, carrying the cross beams, which, in turn, carry the longitudinal beams; these latter carry the planks of the wooden deck. All steel material was by Siemens-Martin, of England, and is according to specifications for similar work. The steel piling runs from 18 feet in length by 4½ inches in diameter to 33 feet in length by 6 inches in diameter, 108 being the total number used. The piling is secured by diagonal longitudinal and transverse cross-bracing of steel beams, 5 by 3 inches. A track 3 feet 6 inches in width between rails runs the length of the pier. There are two steel hand-power cranes of 5-ton capacity each at 20-foot boom radius, both of rotary-rail type. A new 10-ton electric power crane is also to be installed. Loading platforms are protected by wooden aprons at the sides. The construction of the pier was contracted for with the Harbour & Dock Supply Co., of London, England.

The elevation above sea level of the top of the pier deck is 6 feet at high tide. The depth of water at the end of the pier is between 12 and 14 feet. Large ocean vessels can not land at this dock, but handle cargo by means of lighters.

The company also owns a smaller dock, used for coastwise traffic. This is an old wooden pier 64 meters long by 11.50 meters wide, almost entirely covered throughout its widest part with a wooden frame shed carrying a corrugated iron roof. There is installed at the end of this pier a fixed 3-ton hand-power crane. Built by the municipality of Carupano, it was sold to Sr. G. Franco Golding, who in turn sold it to the Cumana & Carupano Pier & Tramway Co. It is situated 11 meters to the east of the steel pier built by the latter company.

The warehouse is of concrete covered with an iron roof and measuring 67 by 15 meters, the floor space being 900 square meters. The roof beams carry a traveling crane of sufficient lift for general merchandise, etc. It is located just to the east of the end of the steel pier.

The Carupano lighthouse was built and is owned by the Cumana & Carupano Pier & Tramway Co., charges being 0.10 bolivar (\$0.019) per registered ton, including pier charges. It is located on a promontory just to the east of the pier, its base being 32.4 meters (1 meter=3.28 feet) above sea level. The tower is of steel, in the form of a squared pyramid, on a base of concrete, the total height being 32 meters. The time of the light is 10 seconds of light flash followed by 5 seconds of darkness. Lighting is by means of electricity, and this light can be distinguished from the sea at a distance of 25 miles from the port on a clear night.

For the harbor and port charges at Cumana and Carupano the reader is referred to the tariff of the Cumana & Carupano Pier & Tramway Co., on page 159. The port charges collected by the Government are the same as for La Guaira.

The electric light plant of the company consists of two 120-horsepower Crossley gas-producer engines, one of which drives a three-phase, alternating 80-kilowatt generator of 2,400 volts and 60 cycles, and the other an 80-kilowatt, direct-current, 600-volt, 133-ampere generator—the former being used for the lighting plant and the latter for the electric street railway and other power purposes. (The Crossley engines are made in Manchester, England.) The consumption of anthracite coal for the gas generator is 380 grams per horsepower-hour. After all the necessary current is used for lighting purposes, there is an excess to be used for power of 70 horsepower of direct current and 60 horsepower of alternating current. Motors of 500 volts, direct current, are used on the car circuit, and there are transformers, 2,400 volts, 60 cycles, stepped down to 220 volts for general use.

The electric car line is 3 feet 6 inches in width between rails and runs from the end of the pier to the extreme western end of the town, a distance of 2.4 kilometers (1 kilometer=0.62 mile) along the main street. There are 570 meters of sidetrack. Cars are of the open type, with a capacity of 40 passengers each, equipped with two motors of GE-60 type and 27 horsepower each. Cars are also used for hauling flat cars with freight to and from the pier for cargoes in and out.

The sawmill turns out boxes for beer, soap, etc., and lumber for local construction and repair work of many kinds. The small machine shop in connection with it (belonging to the company) also does general public repair work.

NAVIGATION—IMPORTS AND EXPORTS.

During the year 1919 a total of 33 foreign steamers and 12 Venezuelan sailing vessels called at Carupano with foreign cargo, the ships under foreign flags being as follows: British, 16 steamers, of 480 tons; Dutch, 13 steamers, of 20,090 tons; French, 4 steamers, of 3,044 tons. During the same year, 13 British steamers cleared from Carupano, with a total tonnage of 2,841; 14 Dutch steamers, with a tonnage of 22,421; and 7 French steamers, with a tonnage of 6,156.

Seven Venezuelan sailing vessels, with a tonnage of 224, cleared for islands of the Caribbean.

Imports during the year 1919 at Carupano were as follows: From the United States, 332,760 kilos, valued at 425,418 bolivars (\$82,106); Great Britain, 46,281 kilos, valued at 230,089 bolivars (\$44,407); Trinidad, 280,989 kilos, valued at 109,609 bolivars (\$21,155); Netherlands, 10,250 kilos, valued at 44,316 bolivars (\$8,553); France, 2,948 kilos, valued at 31,167 bolivars (\$6,015); Italy, 2,606 kilos, valued at 8,195 bolivars (\$1,582); Spain, 195 kilos, valued at 3,923 bolivars (\$757); total, 676,828 kilos, valued at 184,021 bolivars (\$35,516).

Exports from Carupano to the United States during 1919 were: Cacao, 454,466 kilos, valued at 977,036 bolivars (\$188,568); hides, 20,004 kilos, valued at 55,607 bolivars (\$10,732); coffee, 11,087 kilos, valued at 23,854 bolivars (\$4,604); sole leather, 410 kilos, valued at 1,640 bolivars (\$317); and some deer and goat hides in small amounts. France took 2,000,163 kilos of cacao, valued at 3,416,421 bolivars (\$659,369); 1,066,883 kilos of coffee, valued at 1,575,626 bolivars (\$304,096); and 82,124 kilos of leaf tobacco, valued at 103,750 bolivars (\$20,024), besides some hides, pearls, etc. Carupano is a regular port of call from Port of Spain, Trinidad, for the vessels of the *Compagnie Générale Transatlantique* from Havre, France. The Netherlands took 314,861 kilos of cacao, valued at 713,298 bolivars (\$137,667); 35,949 kilos of coffee, valued at 67,313 bolivars (\$12,991); and 17,300 kilos of leaf tobacco, valued at 49,557 bolivars (\$9,565). Trinidad took 256,384 kilos of cacao, valued at 416,967 bolivars (\$80,475); 65 tons of corn, valued at 305,408 bolivars (\$58,944); and other products in small amounts. Total exports from Carupano amounted to 4,473,586 kilos, valued at 7,857,015 bolivars (\$1,516,404).

RIO CARIBE—CRISTOBAL COLON—CANO COLORADO.

The total exports of the small port of Rio Caribe during 1919 amounted to 556,028 kilos, valued at 637,383 bolivars (\$123,015), most of the shipments being to Trinidad.

Cristobal Colon, a port of export and import, sent 42,249 metric tons of asphalt to the United States during 1919. To Trinidad it shipped 2,654,861 kilos of cacao, valued at 3,845,938 bolivars (\$742,266), and 52,473 kilos of coffee, valued at 89,472 bolivars (\$17,268), as well as a variety of foodstuffs, including 1,250 tons of corn.

Cano Colorado, the port for Maturin, received during 1919 a total of 684 tons of general merchandise, valued at 1,381,326 bolivars (\$266,596), of which the greater amount was foodstuffs. Other small coastwise ports are Guiria, 260 tons; Irapa, 635 tons; Yaguaraparo, 306 tons; and Pedernales, 103 tons.

STATISTICS OF COASTWISE TRAFFIC.

The port of Carupano received during 1919 a total of 4,086 metric tons of coastwise freight valued at 8,077,084 bolivars (\$1,558,877), of which 1,785,586 bolivars (\$344,618) represented foreign-made cotton goods. Rio Caribe received a total of 2,218 tons, valued at 3,056,889 bolivars (\$589,980), and Puerto Sucre handled 5,132 tons, valued at 9,151,707 bolivars (\$1,766,279), during the same period. Cariaco is

also a small port for coastwise traffic and handles about 475 tons of imported merchandise per annum.

During 1919 Cristobal Colon received a total of 7,128 tons of general merchandise and foodstuffs by coastwise traffic, valued at 4,297,828 bolivars (\$829,481), although of this total 2,514,554 bolivars (\$485,309) represents cacao received for reexport to Trinidad, where it is sold. This production of cacao comes from small points along the coast of the peninsula of Paria and is concentrated at Cristobal Colon for export and sale to Trinidad.

'VENEZUELAN NAVIGATION CO.

Capitalized at 3,000,000 bolivars (\$579,000), this Venezuelan company, the Compañía Anónima Venezolana de Navegación, operates three fleets of steamers in the Venezuelan coasting, lake, and river trade, as follows:

Coasting fleet.—Steamships *Mazanares*, 1,200 tons; *Guarico*, 900 tons; *Venezuela*, 950 tons. These steamers serve all coast ports—Maracaibo, La Vela (Coro), Cumarebo, Tucacas, Puerto Cabello, La Guaira, Higuerote (Carenero), Piritu, Guanta, Cumana, Porlamar (island of Margarita), Carupano, Rio Caribe, Cristobal Colon, Tucupita, Barrancas, San Felix, and Ciudad Bolivar. In Maracaibo connection is made with the lake fleet for all points on Lake Maracaibo and the river ports from which connections are made for Cucuta, San Cristobal, and Merida.

Lake fleet.—Steamships *Progreso*, 300 tons; *Nuevo Mara*, 150 tons; *Nuevo Fenix*, 150 tons; *Villamizar*, 150 tons; *Tachira*, a tug for lake use, 40 tons; freight launch *Presidente Gomez*, 25 tons.

Orinoco River fleet.—The steamship *Delta*, of 309 tons, runs weekly between Port of Spain, Trinidad, and Ciudad Bolivar (250 miles up the Orinoco River), connecting with ocean steamers at Port of Spain. The other boats of the river fleet are the *Apure*, of 191 tons, the *Alianza*, of 147 tons; the *Arauca* of 71 tons, the *Amparo*, of 41 tons, and the *Boyaca*, of 31 tons.

In connection with its weekly service between New York and La Guaira, the "Red D" Line runs a small steamer called the *Merida*, of 690 tons, between La Guaira, Puerto Cabello, Curaçao, and Maracaibo, passengers from Maracaibo for New York being transferred at Curaçao.

Navigation through the entrance to the Lake of Maracaibo is limited to 12-foot draft, preventing the navigation to the port of Maracaibo of large ocean vessels. During the last two years of the war the New Orleans & South American Steamship Co. (W. R. Grace & Co.), of New Orleans, operated a small steamer, the *American*, between Maracaibo and Curaçao and La Guaira, touching at Puerto Cabello, but the vessel selected proved to be old and unfitted for the service, which was discontinued. The principal use of this boat was to bring out exports for transshipment at Curaçao for the United States.

The Compañía Anónima de Navegación Fluvial y Costañera, now known as the Compañía Anónima Venezolana de Navegación, had, in May 1916, two ocean-going steamers running coastwise, two small river boats on the Orinoco, and five steamers of river type on Lake Maracaibo. The steamship *Guarico*, purchased a good many years ago by the Venezuelan Navy, was repaired and remodeled in 1920 and put in the service of the company. In May, 1916, Gen. Gomez consented to the transfer of the company to an American organization, but he later rescinded this action and negotiations were

broken off. In May of the same year the company was sued by the Government for noncompliance with contract and for the collection of damages. It was charged that the company had failed to clean out and dredge the entrance to Lake Maracaibo and certain rivers and that the vessels did not provide service adequate to the demands of the country and in accordance with the contract, which provided for a practical monopoly of coastwise, lake, and river navigation service. The President insisted that any transfer of this company should include an increase in the foreign service to the Gulf ports of the United States and to Vera Cruz, Mexico, and at one time such additional service was planned by the company.

Shortly afterwards, the old company was taken over and reorganized by Gen. Gomez and members of his immediate family, who now hold the majority of stock and are in control. The steamers are old, second-hand boats, in poor condition and habitually overloaded and overcrowded with passengers. Male passengers traveling alone are forced to give up staterooms to women passengers at nearly every port of call, and conditions of travel are very bad on the vessels, which are not kept up or cleaned. There is little or no attempt at inspection of machinery or boilers or enforcement of regulations for safety—boat and fire drills being unknown. No regular schedules are maintained, although weekly sailings can be counted on, except for points above Ciudad Bolivar on the Orinoco River, where navigation is carried on only during the rainy season, from June until November, with any degree of regularity. The two small steamers mentioned go up the Orinoco as far as its junction with the Apure River and ascend the Apure as far as San Fernando de Apure. They also ascend the Orinoco as far as the Arauca River at Alacala, ascending the Arauca for a short distance to the rubber camps. In good seasons these small river steamers go up the Apure as far as the town of Guasqualito, in the extreme western corner of the State of Apure, near the Colombian border. The Portuguesa River is also navigated, from San Fernando de Apure, as far up as the town of Guaderrama. The Arauca is navigable as far up as the town of El Amparo, opposite Guasqualito on the Upper Apure, but only in the season of high water and always with difficulty. (For details of Orinoco River navigation, see p. 289.)

COMMERCIAL POSITION OF CARACAS.

From the foregoing it is seen how Caracas, situated about halfway along the Caribbean coast of Venezuela, is in easy coastwise communication with nearly all of the trading centers of the country, and how large merchants can compete for the trade of the interior, with the exception of the trading center of Ciudad Bolivar, which is the headquarters for the Orinoco Valley commerce in rubber, balata, chicle, sabadilla, gold, etc., and which is more allied with Trinidad than with the rest of Venezuela so far as commercial interchange is concerned.

Importing manufacturers' agents established in Caracas cover the country with traveling salesmen, reaching even the most interior points of the Andes. Many of the larger firms specializing in dry goods and hardware maintain branch offices in Maracaibo, Trujillo, Merida, etc., and the larger firms of Cumana, Barcelona, and Caru-

pano have found it more convenient to locate their principal warehouses, stores, and offices in Caracas, the capital and banking center of the country.

In Caracas there are 170 importers of foreign merchandise of all kinds. About 50 of these houses are large, having a capital of \$200,000 or over and do a large wholesale business with the interior, handling also coffee, cacao, hides, and minor products of export.

Large crops of coffee and cacao during 1916 and 1917, entering into the trade balance for 1919 and sold at high prices during and immediately following the war, greatly stimulated business all over the country, and more especially in Caracas. Great progress was made in banking. Native banks increased their capitalization, and two American banks were established in the country as branches of New York institutions. In 1917 imports from the United States amounted to 70 per cent of the total.

Nearly all business with the interior and small towns is done on a long-credit basis by the Caracas merchants and importers. The usual terms are six months with interest at 10 per cent, settlements being at the time of the movement of the harvests, according to the region of destination of the goods. The coffee harvest normally is in December, the movement being in that month and during January, when all old bills are paid and new stocks laid in for the coming commercial year. The heaviest buying is in March, and the largest volume of delivery of goods at port of entry begins in May and lasts through June. Buyers from the interior come into Caracas all through the summer and fall months, securing their stocks in anticipation of the fall coffee-picking season. Following the high prices secured for coffee and cacao during 1919, buying in the United States and England was very heavy during the latter months of 1919 and the first months of the spring of 1920. Enormous stocks of cotton goods and textiles were purchased at the then prevailing high prices in anticipation of another good year in coffee for 1920. Coffee constitutes two-thirds of the exports of the country and is always the barometer of business conditions for Venezuela in general.

Stocks of textiles on hand in stores and warehouses of Caracas at the time of the writer's investigation (November, 1920) were estimated at 60,000,000 bolivars (\$11,580,000 at par), the measurement volume being double that of any normal year before the war. As about 60 per cent of the imports into the country consist of the cheaper grades of cotton textiles, and as the stock indicated above may be said to be sufficient for the normal needs of the people of the country for a period of about two years, the importance of this condition can be imagined.

METHODS OF TRADE, CREDIT TERMS, AND PROGRESSIVE TENDENCIES.

Heretofore American manufacturers have not, as a rule, extended credit directly to Venezuelan importers on account of their small acquaintance with the individual Venezuelan firms and importing houses and also because of the lack of adequate protection under the existing system of customs procedure. "To order" shipments can not be made to Venezuela because the possession of the bill of lading is no guaranty of payment for merchandise, the existing laws allow-

ing delivery to be obtained by the holder of the consular invoice, or of a copy of such invoice, which may be procured from the customs authorities at the port of entry upon a small payment by the person whose name appears on the original.

In order to obviate this difficulty and to furnish protection to American exporters, the American Mercantile Bank of Caracas (Banco Mercantil Americano de Caracas) has established a branch at La Guaira, which receives consignments,¹ charges the importer the current commission of 1 per cent for clearing the goods through the customhouse and reshipping them to Caracas, and delivers the merchandise to the importer only against payment or acceptance of the draft or as otherwise specially instructed.

The bulk of the business has been done through export commission houses well acquainted with the market and individual firms, although during the past few years there has been an increasing movement toward a more direct representation by American manufacturers, either through resident agents or salesmen visiting the country.

Export commission houses in the United States allow usually from 60 to 90 days' sight or date on amounts of invoices in the Caracas district, and in exceptional cases even 120 and 180 days. European houses, longer acquainted with the market, allow as high as six months on "open account," but appear to have no fixed rule, the extension of time varying with the standing of the customer, the nature of the goods sold, etc. The consensus of opinion in the Caracas market among the larger Venezuelan importing houses and wholesalers to the interior seems to indicate the great importance of long credit terms, it being said that time on bills is a more important factor than rate of interest or even price.

The great advantages of American trade with the Caracas district—and, in fact, all of Venezuela—lie in the proximity of the two countries and the more rapid delivery of goods. An order can be delivered in Caracas six weeks after date, while it would take about five months to obtain the goods from any of the larger ports of Europe under present conditions. By purchasing from the United States, merchants can carry smaller and more varied stocks, of later design, and the element of time does not have the importance formerly attached to it in connection with European shipments. Also, on account of the shorter distance, freight rates are lower. The primary consideration is, of course, adequate ocean transportation facilities, which must be increased and improved, with better service.

Importers are progressive; most of them have traveled in Europe and the United States, and they know their own market extremely well, being quick to stock new goods and articles which they think will appeal to the public. Local competition is keen and merchandising somewhat overdone as a rule. Advantage is taken of the advertising mediums offered by the two large daily papers of Caracas, which have a wide circulation in the surrounding country towns and villages as well as in the capital.

For years past Venezuelan importers have been accustomed to a careful and intelligent commercial service from Europe. Instructions covering consular declarations, packing, etc., have been care-

¹ EDITOR'S NOTE.—As this handbook is going to press, information is received that this service has been discontinued by the bank mentioned, but is carried on by a responsible La Guaira firm.

fully carried out to the letter, while packing lists have agreed with serial numbering of packages and the corresponding sample list and invoice. The chief cause of complaint against American exporters is the lack of attention to these important details of exporting. Another cause of complaint is the careless handling of shipments by the steamship companies, a large amount of damage being done to well-packed goods by smashing in loading and discharging. Steamship companies are limited in their liability for damage to \$100 per package as the maximum amount of claim allowed, and very often delay or failure to collect is encountered in the case of insurance claims. Importers argue that insurance should include the value of the goods according to the invoice and also the import duty—the two figures representing the true value of the goods at the port of entry—especially since the import duty on the goods has to be paid if the goods appear on the consular invoice, whether or not they are actually delivered by the steamship company. A shipment lost in transit or “short-shipped” by the ocean carrier pays duty just the same on the arrival of the steamer. Steamship companies want only to pay for lost or damaged shipments at the New York price (value) and not the delivered value which includes duty. Ocean carriers should be forced to pay for claims according to the packing and condition of goods upon receipt from the land carriers (railways).

The best method to be followed by the exporter to Venezuela is to take care of the marine insurance from his own office and see to it that full protection is given each shipment to destination, including reimbursement for loss by pilferage at any time up to arrival at port of entry. As an example of this necessity, a recent shipment of high-priced drugs may be cited. This shipment was sent to La Guaira by “express freight”—that is, it was given into the personal care of the purser on the vessel. It did not arrive at port of destination (entry), and the purchaser had to pay the heavy import duty to the Customs, since the shipment appeared on the consular invoice as is usual. The purchaser was unable to collect more than \$100 from the steamship company for a package valued at several thousands of dollars.

The necessity for long-credit terms by the United States in Venezuela has been eliminated to a very great extent by rapid steamer service from American ports, resulting in short-delivery periods, combined with American branch banking service established in the country, the direct result of which has been a better knowledge of credits, discount service, and lower rates of interest with larger credit facilities, including also advances on export shipments. However, credit terms may be used later as a method of competition; and, as has been said, long-time credit is a powerful factor in competition where the small dealer of the interior is concerned.

American specialties are well known and liked throughout Venezuela. The low and medium priced automobile of American manufacture is already firmly established as an economic factor of the country and will become even more popular as the system of highways develops during the next 10 years. However, the average merchant of the capital is a shrewd observer of international market conditions, which are carefully watched and followed, as is also the exchange market, of which full advantage is taken; and, in many cases, European goods are really more suitable to the country than the competing American article of the same class and price. One may take,

for example, the item of women's silk and cotton-mixture hosiery; the American article in this line, while leaving nothing to be desired in the way of style, finish, price, or quality, really does not fit the Venezuelan feminine foot, which is very small and short-toed and has a high instep arch. Buyers complain that they can not wear American stockings, as these are too long in the foot and sufficiently small sizes are not furnished. The same applies to footwear. The result is that feminine Caracas asks for French fancy hosiery, in which they know from experience they can be easily fitted. This same example would also apply to a great many lines throughout South and Central America and Mexico—success being dependent on study and observation on the part of the American manufacturer.

In summing up the relative advantages of exporting nations in trade with Venezuela it may be said that the United States has the advantage of closer proximity and a more varied production (with the exception of cheap cotton textiles) and of being the principal market for Venezuela's exports of coffee, cacao, hides, etc., while Europe has the advantage of longer establishment in the country of resident agents and firms, longer acquaintance with the market and individual merchants and houses, a lower exchange (at present), and a larger supply of trained and experienced export men to handle the trade.

The excellent work done during the last few years by direct representatives of American firms interested in enlarging their business with Venezuela has been more or less counteracted by the existing condition of the country. Orders are usually for a varied assortment of general merchandise. There is little specialization, and the trade in any one line is small, with the exception of cheap cotton textiles, which form the bulk of the business in merchandising and control the market.

American firms interested in expansion of their business with Venezuela will do well to watch carefully the coffee market and crop reports from the country, as coffee is the trade barometer and furnishes a sure indication of business conditions for the season.

INDUSTRIES OF CARACAS AND VICINITY.

PRODUCE FOR CARACAS MARKET.

Beef cattle for the Caracas market are brought in on the hoof over the highway from Maracay and are held for slaughter. Sufficient dairy cows are held in the neighborhood to supply the needs of the city, milk being usually delivered from door to door by means of a pack animal carrying two milk cans, one on each side. All milk taken is boiled by the householder. Sufficient hogs are raised in the surrounding country to supply the district with lard. The entire Caracas Valley is intensively cultivated, as has been said, and all sorts of fresh vegetables are raised for the Caracas market in sufficient quantity to supply the demand. The same may be said of fruits, such as bananas, oranges, "aguacates" (alligator pears), and the like. Plantains and bananas constitute one of the principal articles of diet for the poorer classes and are, in fact, found on all tables. Good oranges command a higher price than in California. In general, prices for local produce run about on a par with those in

the United States. Considerable land in the valley, as far as Petare, is devoted to fodder for the draft animals of the city, corn (planted thickly) being grown principally for this purpose.

SUGAR INDUSTRY.

The industry of Caracas and vicinity that is next in importance to the manufacturing enterprises is the cultivation of sugar cane, which is the principal agricultural product. There are 22 sugar plantations in the Caracas district, as follows: Caracas, 5; Guatire, 5; Petare, 6; Ocumare del Tuy, 2; Guarenas, 4—all of considerable extent and importance—as well as a number of smaller sugar farms. The total production capacity of the 22 estates mentioned is 1,210 tons per week when grinding. Five estates make refined sugar with modern machinery, the combined capacity being 450 tons per week during the grinding season. The largest factory is located at Petare and is called the "Central Caracas."² The other plantations make the "papelón" of the country, a brown sugar put up in long cones and universally used by the people as a principal article of food.

During the year 1919 the port of La Guaira exported sugar as follows: Great Britain, 983,789 kilos (1 kilo = 2.2046 pounds) of "papelón," valued at 425,664 bolivars (\$82,153); France, 486,153 kilos of sugar, valued at 466,975 bolivars (\$90,126); Spain, 76,701 kilos, valued at 74,315 bolivars (\$14,343); Curaçao, 46,084 kilos, valued at 15,500 bolivars (\$2,991); Canary Islands, 5,100 kilos, valued at 4,590 bolivars (\$886); together with trifling amounts of sugar or of "papelón" to other countries—the total of nearly 1,600,000 kilos, valued at more than \$190,000, representing the surplus production of sugar in the Caracas district. No sugar was shipped to the United States from La Guaira, but during 1919 this country took 5,261,744 kilos of sugar, valued at 2,108,142 bolivars (\$406,871), from Maracaibo and 3,000,000 kilos, valued at 1,304,541 bolivars (\$251,776), from Puerto Cabello (produced in the Valencia district).

Prices during November, 1920, in the Caracas market averaged 220 bolivars for the first grade and 200 bolivars for the second grade of refined sugar (\$42.46 per 100 kilos, or \$0.193 per pound, at wholesale, for first-grade sugar). "Papelón" sold at wholesale at 85 bolivars per 100 kilos for the best grade (\$0.074 per pound).

DAIRYING.

Another extensive industry, but one which does not figure in export returns, is that of hand cheese making. Numerous flocks of goats are raised on the semiarid slopes of the Coast Range about Caracas, and a small, hard cheese is made for the local market and universally consumed.

The "Lactuario," owned by Gen. Gomez and located at Maracay, is a modern creamery, equipped with the latest machinery for cheese

² The Petare Sugar Co., "Central Venezuela," located at the town of Petare, in the Caracas Valley, is incorporated in the State of Delaware with a capital of \$90,000 (which represents only the value of the plant and equipment, having a capacity of 150 tons) and undertakes the grinding of the cane from the neighboring plantations. The output in 1916 amounted to 20,000 hundredweight. The company gives the planters 6 pounds of sugar for each 100 pounds of cane. The crop is gathered every 20 months and has a high sugar content, the juice going as high as 13° Baumé.

Production of cane in this wide section of the Caracas Valley can not increase, because every available acre of land is already under cultivation.

and butter making and also for packing butter in tins for shipment into the interior of the country and for export. The main supply of butter for Caracas comes from this factory, though considerable tinned Danish butter is still imported. The poorer classes do not use butter in any form. The plant was established in 1915. It is also equipped to turn out condensed milk and cream. The butter production is about 1,000 pounds per day. For the Caracas market this butter is packed in $\frac{1}{2}$ -pound paper packages and sells at about 80 cents per pound. This plant is the largest modern dairy in Venezuela and enjoys a tacit monopoly of the business for the country, with the exception of the far-away Maracaibo region. "Maracay" cheese sells at wholesale in the Caracas market for 290 bolivars per 100 kilos—equivalent to \$0.254 per pound.

MISCELLANEOUS MANUFACTURES—BASES OF VENEZUELAN INDUSTRY.

Other important items of manufacture in Venezuela and the Caracas district, all of which affect imports, are paper, cement, textiles, knit goods, leather, boots and shoes, glassware, furniture, starch, cottonseed oils, candies, biscuits, macaroni products, soap, beer, rum, patent medicines, perfumery, chocolate, matches, cigarettes and cigars, etc.

Most of the manufacturing industries of Venezuela are based not upon natural resources but solely upon the tariff protection; and practically all of them have to import raw materials (in part at least), with the exception of the cotton mills, which now have sufficient cotton from the domestic production of the country, principally from the Valencia district. The limitations placed upon exports by the belligerent nations during the war and the resulting high prices for all lines of manufactured articles caused the margin of profit of Venezuelan factories to be very high, in spite of the cost of certain raw materials and the difficulty in securing them. Capital was increased in many cases, and plans for expansion were carried forward.

NATIONAL CEMENT FACTORY.

The Fábrica Nacional de Cemento, established in 1907 with a capital of 2,000,000 bolivars (\$386,000), shares of which are now quoted (November, 1920) at 46 bolivars (\$8.88), is located at La Vega, a suburb of Caracas. In 1911 this mill produced 10,000 barrels; in 1912, 15,000 barrels; in 1913, 25,000 barrels; in 1914, 37,500 barrels; and in 1915 and 1916, 62,500 barrels for each year. In 1917 the company produced 100,000 barrels, three-fourths of which were taken by the Government.³

In 1920 the capacity of this factory was increased from 150 barrels per day to more than 300 barrels. Builders complain that too much gypsum is being used in this product to make it set more slowly, and that the product is uneven. In November, 1920, a shipment of 7,000 barrels of Swedish cement arrived at La Guaira by the steamship *Torbjorn* from Malmo, Sweden. The brand is known on the Caracas market as superior to the domestic product, and the price is lower than that of American cement. The greater part of

³ For statistics covering imports of cement into Venezuela, see Special Agents Series No. 144, "Markets for Construction Materials and Machinery in Venezuela," by W. W. Ewing, pp. 31 and 32.

the shipment was taken by the Government for public works, although a lot of 2,000 barrels was offered at wholesale by one large importer.

ROPE AND SACK FACTORY.

The Fábrica de Fibras y Cordeles, of Caracas, makes rope for all purposes of the country, having been established in 1912 with a capital of 400,000 bolivars (\$77,200). The plant also includes a sack-making department that turns out sisal-fiber sacks for coffee, cacao, etc., for export. During the first half of 1920 this company shipped a total of 236,821 kilos of sacks, valued at 327,564 bolivars (\$63,220), to ports along the coast for packing coffee and cacao for export, in addition to its local and interior business. Native fiber, called "fique," similar to Mexican henequen, is used in making sacks and rope. A small amount of cotton twine and fish cord is also made. The stock was quoted at 105 per cent in November, 1920.

GLASS FACTORY.

The Manufacturera de Vidrios y Cristales was established in Caracas in July, 1912, with a capital of 2,500,000 bolivars (\$482,500), the stock being quoted in November, 1920, at par, with no selling offers. The company makes about 12,000 bottles per month, and ground has been taken in Maiquetia, a suburb of La Guaira, for an additional factory for bottles, it being planned to supply the entire bottle demand of the country, estimated at 40,000 to 45,000 per month. Cheap grades of table glassware are also made, as well as several lines of ornamental glassware which compete with the imported article. The president of this company is an American, well known and acquainted in the United States.

NATIONAL MATCH FACTORY.

The manufacture of matches is a Government monopoly, the factory being an English company, the National Match Factory of Venezuela (Ltd.), capitalized at £219,967 (\$1,070,469 at par) and paying dividends of 6 to 7 per cent per annum. The Government places a stamp on every box of matches sold, from which an annual revenue of approximately 400,000 bolivars (\$77,200) is realized. During and following the war most of the phosphorus, boxes, and labels have been imported from the United States. Two kinds of matches are made, the so-called "wax" match and a wooden safety match, the former being the most used.

CHOCOLATE AND CANDY FACTORIES.

There are a number of chocolate and candy factories using the native cacao. The largest of these is the Sucesora de La India, de Fullie y Cia., established in 1861 with a capital of 500,000 bolivars (\$96,500), and turning out many varieties of chocolate of a very excellent grade and appearance, competing with manufactured chocolates imported from abroad. Many kinds of candies are also made, as well as carbonated waters, ice cream, etc. A large ice-cream parlor and bar is operated in connection with the business, which also takes in catering, pastry making, and other similar lines.

BREWERIES—TILING, MOSAIC, AND CEMENT-PIPE FACTORY.

There are two large breweries in the Caracas district—the Cervecería Nacional, established in 1893, capitalized at 1,410,000 bolivars (\$272,130), and located in Caracas (stock quoted in November, 1920, at 125 per cent, or 25 per cent above par value), and the Cervecería Venezolana de Maiquetia, established in 1912 and capitalized at 1,500,000 bolivars (\$289,500).

A small cement tiling, mosaic, and cement-pipe factory is also located in Caracas, with a capital of 285,000 bolivars.

CIGARETTE FACTORIES.

The cigarette factories are large, modern concerns and do a large business. All paper for cigarette making is furnished by the Government and bears the Government revenue stamp, the total revenue received from this source by the Government being 6,430,000 bolivars (\$1,240,990) in 1918, with an additional return of 56,586 bolivars (\$10,921) on imported cigarettes for the same year.

The total production of tobacco in Venezuela may be said to be about 4,000 tons per year, of which the Caracas cigarette factories take 1,200,000 kilos, or 30 per cent of the production. Domestic manufacture of cigars takes another 1,000,000 kilos per annum, which, with the amount used for cigarettes, represents about half of the country's tobacco production, the remainder being exported, principally to France. During the last half of 1918 Venezuela exported a total of 2,500,00 kilos of tobacco.

The present actual monthly production of cigarettes in the Caracas factories is 4,000 boxes of 100 dozen packs each—packs containing from 10 to 14 cigarettes each. The total amount of capital invested in tobacco cultivation in Venezuela is estimated at about 10,000,000 bolivars, or approximately \$2,000,000. Quotations for the best three grades of leaf during the summer of 1920 were 185, 120, and 70 bolivars (\$36, \$23, and \$14) per 100 pounds. The district of Maturin, included in the Caracas commercial district, produces a total of 1,500 tons of tobacco per annum. More than one-half of the tobacco production of the country comes from this section and around the Gulf of Cariaco east of Cumana. (For details of the tobacco industry see pp. 58 to 64.)

The largest factories in the Caracas district are "La Industrial Cigarrera," with a capital of 1,000,000 bolivars (\$193,000), established in 1917, and the "Unión Fabril Cigarrera," established in 1911 and capitalized at 3,125,000 bolivars (\$603,125), the stock of the latter being quoted in November, 1920, at 3 per cent above par and the bonds at 25 per cent above par. There are also 11 other cigarette factories located in Caracas—some of them important. Keen competition exists in this industry, and large sums are spent on advertising and propaganda by the factories.

COTTON FACTORIES.

The first cotton mill in Venezuela was built in Caracas by a Philadelphian in 1856, but this venture failed, as did other attempts to establish the industry in the country until Sr. Salas Perez built a mill at Valencia about 30 years ago and another in Caracas in 1911,

the two being now united under the name of Telares de Caracas y Valencia, with a combined capital of 4,040,000 bolivars (\$779,720), divided into shares of 100 bolivars (\$19.30) each and now quoted on the Caracas market at 95. All machinery is of English make. The Valencia mill has 5,000 spindles and 150 looms and the Caracas mill 6,000 spindles and 100 looms. A knitting department is also included in the Caracas mill equipment, consisting of six ordinary and two large knitting machines and four hosiery machines of Spanish make. Chiefly calicoes, denims, drills, and grey goods are made in the cotton mills, which are equipped with spinning and dyeing plants. In September, 1920, a price reduction of 25 per cent was made on all goods produced. The stock was then selling at a premium of 50 per cent above par, but with the reduction in the prices of foreign-made goods and the general depression following the lower prices for coffee, stocks of all Venezuelan industrial enterprises dropped considerably.

There is another cotton mill in the Caracas district located at Palo Grande, a suburb of Caracas. Its name is Telares de Palo Grande, and the capital is 4,000,000 bolivars (\$772,000). Two large mills are located in Valencia.

The balance sheet of the Telares de Caracas y Valencia for the first half of 1920, as of June 30, 1920, showed the following results.

Profits (net) for the period January 1 to June 30, 1920, were 1,329,019 bolivars (\$256,501), distributed as follows:

	Bolivars.
Reserve fund, 5 per cent of.....	66,451
Dividend guaranty fund, 10 per cent.....	132,902
Six dividend payments, to January, 1921.....	909,000
Balance to guaranty fund.....	220,666
Total.....	1,329,019

The total reserves of the company are given as follows:

	Bolivars.
Reserve fund, total.....	350,080
Guaranty fund, total.....	669,191
Earnings for distribution.....	909,000
Total.....	1,928,271

These reserves represent about 40 per cent of the capital of the enterprise. A further fund of 482,237 bolivars (\$93,072) is in hand for the enlargement of the plant. In Caracas the new addition is now complete, and the other will soon have the machinery installed, about doubling the capacity of the mill. The new machine shop and repair department has been the means of great savings to the company. In Valencia the new addition to the plant has been completed and the machinery installed, the total number of looms now being 250.

SHOE SHOPS—FURNITURE SHOPS—MISCELLANEOUS ACTIVITIES.

Caracas has a number of small shoe shops turning out a very good grade of footwear for the local trade. Imported leathers are used for the uppers, shoe findings being also imported, but the native leather is used for the soles. Retail prices for men's hand-made shoes run from \$6 to \$12 per pair. The bulk of the population wears the native "alpargata," a leather or fiber soled sandal with a coarse

woven cloth toe and heel piece. These small shoe shops completely supply the local market for high-grade footwear of all kinds, the product being used also by the most discriminating foreigners.

Furniture—much of it of beautiful design and artistic finish—is made in a number of small shops in the city. The favorite wood is the native red cedar, which withstands the attack of the white ant and does not warp with the moisture during the rainy season. Carpenters and joiners receive from \$1.20 to \$1.60 per day in small shops, and furniture can be purchased at prices that make the imported article prohibitive. Upholstery materials are imported, as are marble table tops, stand tops, and mirrors.

There are no statistics to show the production of the many small shops and factories turning out articles that compete with foreign-made goods, but imports of furniture and shoes into the country are very light and it may be assumed that the domestic industry just about supplies the demand.

Chocolate, macaroni products, vegetable oils, etc., are made in sufficient quantity for local and domestic consumption, while in Valencia the production of cottonseed oil in a refined state is sufficient to permit heavy exportation to Cuba and Porto Rico.

WEARING APPAREL.

Clothing is made from imported and domestic materials in small tailor shops, of which there are a considerable number in Caracas. The poorer classes wear the "alpargata," trousers, a knit cotton undershirt, and a coat cut in military style, with buttoned collar. The goods are usually cheap, heavy, and rough drills which wear well and which form the principal output of the domestic cotton mills, although, as a rule, the domestic supply does not fill even half of the demand. People of the more well-to-do class wear native tailored suits—mostly of Palm Beach and similar cloths, though white linen and duck are also worn. Light woollens of English and American manufacture are worn also, especially in the evening and during the winter months, when the climate is somewhat cooler. Ready-made clothing of light materials has been recently imported and has had a good sale. There are two or three small shirt factories in Caracas, but none of them is important.

In women's wear practically the same condition obtains. The women of the lower class do not wear stockings, as a rule, although they are beginning to be better dressed and to adopt the styles of the upper classes. Dresses and waists are usually made in the many small sewing shops. French and American fancy shirtwaists are also imported and find a ready market. American style magazines are sold in Caracas and find an interested group of readers among the wealthier people, who are quick to adopt new styles and modes and who dress very well, indeed. Most of the women's shoes and slippers are made locally, "to order," in the many small shoe shops. Fancy evening slippers of French and American make are also imported and handled by the larger stores carrying dry goods, etc., but the local shoemakers are now turning out very good imitations of the best foreign article in this line. The American last for women and men is found to be too long and narrow for the average Venezuelan

foot, which is short, with high instep. French exporters of footwear provide a special short-vamp, high-arched slipper for this trade, which finds an excellent market. The same is true of women's stockings, the American make being found too long in the foot measurement for average wear in Venezuela.

On account of the high import duties on ready-made clothing of all kinds and the low cost of native labor (the native women being very good seamstresses), it is cheaper to have clothing made than to import it ready-made. However, light underwear is imported for the better class of trade, as are also pajamas, neckwear, collars, etc. The bulk of the small retail dry-goods trade is in the hands of Syrians and Corsicans.

MANUFACTURE OF SOAP.

An important item of domestic manufacture is soap of many kinds. In Caracas and La Guaira there are seven soap factories, two of which are in the port city. The largest is the "Victoria," of Perret y Cía., in La Guaira. A cheap grade of laundry soap is made, as well as fancy perfumed soap, which is much in demand. Lahoud y Cía., of Caracas, make a specialty of the latter grade and imitate well-known foreign soaps, such as those of a celebrated American company, which are very well known in the country. Large quantities of fancy soaps and toilet articles are imported into the country, Caracas being the principal market. In 1917 the United States exported to Venezuela \$35,441 worth of toilet and fancy soaps, and in 1918 \$38,513 worth. Local and domestic soap factories import all chemicals used, as well as essences, etc. Animal fats and greases, coconut oil and cottonseed oil are used in the manufacture of these soaps. During the year 1919 the port of La Guaira shipped out, by coastwise traffic, to points along the Venezuelan seaboard a total of 326,509 kilos of domestic soaps, valued at 490,926 bolivars (\$94,740).

TANNING.

The tanning industry is well represented by seven rather large plants, making sole leather, which is much used for the native sandal and modern shoe. A poor grade of kid and calfskin is also manufactured, but does not compete with the imported article, being much inferior in finish and appearance. The domestic sole leather is of poor quality, also, and has a bad odor when wet. The largest tannery is that of Boccardo y Cía., of Caracas. The industry is an important one, as large quantities of sole leather are exported.

The tanning industry is one that is capable of great expansion for export. Labor is cheap and fairly plentiful around the city of Caracas; the people prefer to work in the factories there rather than on the agricultural lands around Valencia, where malaria abounds. The country exports cattle hides, goat and deer skins in large quantities every year, and the live-stock industry is increasing year by year with the application of better breeding methods and more care of the ranges. What is needed is modern methods and machinery and organization of the industry on a large scale. Tanning materials are plentiful and easily obtained in the country, being items of export also. Divi-divi and mangrove bark abound. The domestic market

for fine grades of shoe leathers is a good one, imports in 1918 of these leathers—sole, upper, grain-split, calf, and kid—amounting to a total of \$208,618. Neighboring countries, such as Colombia, also import large quantities of fine leathers for shoemaking, etc.

LIQUOR FACTORIES—STARCH FACTORIES—MACHINE SHOPS AND FOUNDRIES.

A rather large industry in Caracas is that of the liquor factories, in which various fancy native drinks are made from the rum of the country; these beverages enjoy a considerable demand, even being shipped out coastwise. Of these factories there are seven in Caracas alone.

There are also two starch factories, and five small corset factories.

Caracas also has six small machine shops and foundries, where small work is turned out to order—the largest plant being that attached to the glass factory mentioned on page 173.

Insurance is represented in Caracas by the native Venezuelan company La Previsora, capitalized at 6,000,000 bolivars (\$1,158,000) and doing a general life, fire, and marine insurance business. The capital stock is divided into shares of 200 bolivars each, which were quoted on the Caracas market in November, 1920, at 112 per cent, or 12 per cent above par. Agencies are maintained in all of the principal cities and towns of the country.

COMPANIES LISTED ON CARACAS BOURSE.

To convey a better idea of the magnitude of the commercial, public-utility, and industrial companies of Caracas and Venezuela (that is, incorporated companies having their head offices in Caracas), there is given below a list of the companies whose stock is quoted on the Caracas bourse.

Companies.	Capital, in bolivars.	Shares, in bolivars.	Legal domicile.
Banco de Venezuela.....	12,000,000	15,000	Caracas.
Banco de Caracas.....	6,000,000	7,500	Do.
Caracas Electric Co.....	7,000,000	100	Do.
Valencia Electric Co.....	1,400,000	1,000	Valencia.
La Cumaca.....	800,000	100	Do.
La Previsora (insurance).....	6,000,000	200	Caracas.
National Paper Factory (Caracas).....	540,000	100	Do.
Fábrica de Papel de Maracay.....	1,500,000	100	Do.
Cervecería Nacional.....	1,410,000	100	Do.
Cervecería de Maiquetía.....	1,500,000	100	Do.
Cordelería Nacional (cordage).....	400,000	100	Do.
Cia. Nacional de Navegación.....	3,000,000	100	Do.
Telares de Caracas y Valencia.....	4,040,000	100	Do.
Cia. Nacional de Cemento.....	2,000,000	25	Do.
Telares y Hilanderías Orientales.....	3,000,000	100	Cumana-Caracas.
Unión Fabril Cigarrera.....	3,125,000	25	Caracas.
La Industrial Cigarrera.....	1,000,000	25	Do.
Luz Eléctrica de Los Teques.....	230,000	100	Do.
Luz Eléctrica de Barquisimeto.....	500,000	100	Do.
Cia. Industrial de Manzanares.....	2,000,000	100	Cumana-Caracas.
Cia. del "Avila" (Los Chorrros) (building lots in suburbs).....	140,000	100	Caracas.
Sociedad de Cines y Espectáculos.....	400,000	25	Do.
Cia. de Vidrio y Cristal.....	2,500,000	100	Do.
Venezuela Sugar Co.....	4,000,000	100	Do.
Central Azucarero La Ceiba.....	1,250,000	25	Do.
Carupano & Cumana Pier & Tramway.....	500,000	100	Do.
Fábrica Nacional de Mosalcos.....	1,000,000	100	Do.
Cia. de Teléfonos de Barriovento.....	100,000	100	Do.
Tranvías Eléctricos de Valencia.....	500,000	100	Valencia.
Sociedad Industrial Azucarera de Tacarigua.....	2,000,000	500	Caracas.
Fuerza y Luz de Puerto Cabello.....	600,000	100	Puerto Cabello.

* Dollars.

Companies.	Capital, in bolivars.	Shares, in bolivars.	Legal domicile.
Venezuela Potable Water Co.	200,000	25	Caracas.
Cia. Minera Lo Increible.	2,000,000	25	Do.
Cia. Minera La Cumaragua.	1,500,000	25	Do.
Cia. Minera El Amparo.	2,600,000	25	Do.
Luz y Fuerza de Barcelona.	280,000	100	Barcelona.
Nuevo Circo de Caracas (bull ring).	800,000	100	Caracas.
Cia. Generadora de Fuerza y Luz.	2,750,000	100	Do.
Asociación de Agricultores de Venezuela.	150,428		Do.
Bazar Americano.	1,000,000	1,000	Do.
Sanatorio de Guaracarumbo.	100,000	100	Do.
Crédito Mobiliario.	120,000	20	Do.
Cia. Minera El Yuruary.	1,500,000	25	Do.
Luz y Fuerza de Ocumare del Tuy.	84,000	100	Do.
Cia. Anónima Cinematográfica.	400,000	25	Do.
Luz Eléctrica de San Carlos.	28,000	100	San Carlos.
Teléfonos de Barlovento.	200,000	100	Caracas.
La Sucosora de La India de Fullié y Cia.	500,000	500	Do.
Fuerza y Luz de San Fernando.	180,000	100	Caracas (Apure).
Planta Eléctrica de Valera.	140,000	100	Trujillo.
Energía y Luz de Trujillo.	75,000	100	Do.
Gran Ferrocarril del Tachira.	11,200,000	400	Maracaibo.
Gran Ferrocarril de La Ceiba.	8,000,000	500	Do.
Central Azucarero del Zulia.	6,500,000	400	Do.
Telares Hispano-Venezolanos.	1,750,000	500	Do.
Cerveceria de Maracaibo.	1,728,000	1,000	Do.
Cia. Petrolifera de Rio Pauji.	1,500,000	500	Do.
Banco de Maracaibo.	1,250,000	333½	Do.
Central Azucarero de La Ceiba.	1,250,000	25	Caracas.
Unión Agrícola del Zulia.	1,000,000	400	Maracaibo.
Puerto de La Ceiba.	800,000	2,000	Do.
Seguros Maritimos de Maracaibo.	500,000	500	Do.
Tranvías de Maracaibo.	400,000	400	Do.
Cia. Proveedora de Agua.	400,000	400	Do.
Banco Comercial de Maracaibo.	400,000	200	Do.
Cia. Nuevo Cementerio.	100,000	347	Do.
Venezuela Sugar Co.	¢ 4,000,000	¢ 100	Do.
Maracaibo Electric Light Co.	¢ 330,000	¢ 100	Do.

• Dollars.

INDUSTRIAL, PROFESSIONAL, AND COMMERCIAL STATISTICS.

In Caracas alone there are the following small shops and factories, all turning out articles of ordinary use: Medical-cotton factory, 1; pottery factories, 21; sandal factories, 125; sawmills, 4; trunk factories, 3; carbonated-water factories, 3; coffee-cleaning plants, 4; cardboard-box factories, 5; wooden-box factories, 2; shirt factories, 34; candies, 5; carriage and cart shops, 10; mattress factories, 9; dye factory, 1; chocolate factories, 5; furniture factories, 32; hammock factory, 1; ice factories, 2; shoe-last shops, 1; hairpin shop, 1; small soap factories, 5; tile factories (cement), 6; macaroni, 6; fireworks, 12; cooper shops, 3; candle factories, 2; shoemakers' shops, 60.

The professions are represented by: Surveyors, 27; agricultural experts, 10; architects, 15; sculptors, 27; pharmacists, 97; photographers, 40; engravers, 19; professors of languages, 34; electrical engineers, 6; other engineers, 135; chemical laboratories (doctors), 19; lithographers, 2; doctors of medicine, 153; lawyers, 210; oculists, 5; opticians, 4.

Commercial and related lines are represented by the following: Real estate and rental agencies, 17; funeral directors, 4; brokers, 107; steamship agencies, 7; electrical goods and materials, 15; office supplies, 9; men's furnishings, 11; garages and automobile renting establishments, 23; drug stores, 50; candy and pastry shops, 225; motion-picture films, rental and sale, 6; commission merchants, 23; construction company, 1; mirror shops, 4; cattle buyers, 4; im-

porters of foreign merchandise, 170; printers, 30; jewelry stores, 49; bookstores, 20; manufacturers' agents, 54; construction materials, 22; dry-goods importers, 30; dry-goods retail stores, 69; furniture stores, 34; bakeries, 27; hardware stores, 51; tailor shops, 66; hat shops, 14; saddle shops, 19; grocery stores, importing canned and bottled goods, 44; shoemakers and shoe stores, 60.

The trades are represented in Caracas by: Masons, 585; automobile repair shops, 6; carpenters and shops, 330; decorators, 15; blacksmith shops, 51; printers, 30; mechanics, 200; painters, 143—besides large numbers of bakers, sewing women, tailors, etc.

MARACAIBO COMMERCIAL DISTRICT.

LOCATION AND TERRITORY.

The Maracaibo commercial district includes that section of Venezuela around Lake Maracaibo that is more easily accessible through the port of Maracaibo than through any other port of the Republic. It includes the States of Zulia, Trujillo, Merida, and Tachira. The trade of the district, together with that of the Cucuta region of Colombia, is controlled by the importing merchants of the city of Maracaibo, who purchase from abroad and resell to the interior. Some direct business is done by foreign mercantile firms with Cucuta, but this is rather the exception.

The boundaries of the district are: On the north, the Caribbean Sea; on the northeast, the boundary line of the States of Falcon and Lara; on the southeast, the main range of the Venezuelan Andes, called the "Cordillera Merida," dividing the States of Portuguesa and Zamora (included in the Puerto Cabello-Valencia commercial territory) from the Maracaibo region; on the south, the international boundary with Colombia; and on the west the international boundary with Colombia, which, north of Cucuta, follows the line of the range of Perija (part of the Colombian Andes) until the peninsula of Goajira is reached, Venezuelan territory taking in a part of the peninsula as far as Castilletes Bay on the Gulf of Venezuela, formed by the Goajira and Paraguana Peninsulas.

The area and population of the four States are shown in the following table:

[Square kilometer=0.386 square mile.]

States.	Area, in square kilometers.	Population.		Density of population per square kilometer.
		Census, 1891.	Estimated, 1917.	
Zulia.....	65,500	150,776	185,579	2.8
Tachira.....	11,160	101,709	135,068	12.2
Merida.....	11,300	88,522	115,537	10.2
Trujillo.....	7,400	146,585	186,624	25.1
Total.....	95,300	487,592	621,828	6.5

The area of the district is equal to 9.1 per cent of the total area of Venezuela, and its population to approximately 22 per cent of the total population of the country as estimated in December, 1917. The population is for the most part rural, depending upon agriculture for its livelihood; coffee, cacao, and sugar cane are the largest items of production. With the exception of the sugar estates, one brewery and one oil refinery, manufacturing is limited to a few local factories turning out articles of local use on a small scale.

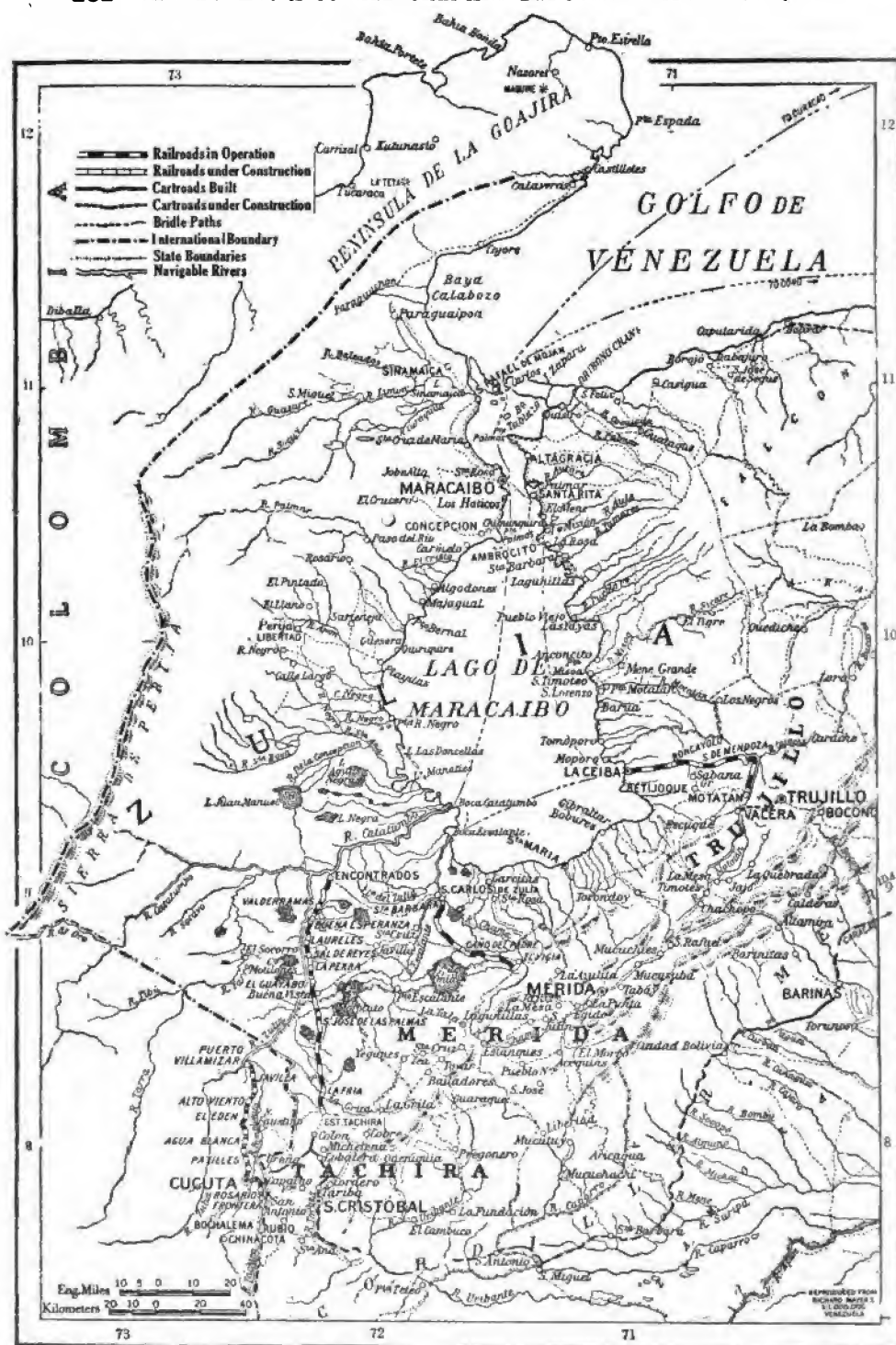


FIG. 13.—Map of Maracaibo commercial district.

TOPOGRAPHY.

The great basis of Lake Maracaibo extends inland from the Gulf of Venezuela (on the Caribbean Sea) for a distance of approximately 135 miles, and is 60 miles wide in the widest place. The lake proper is, in reality, a large, shallow inland gulf or bay, connected with the sea by a fairly wide channel about 40 miles in length, also of shallow depth, the entrance for vessels permitting only an 11-foot draft, and therefore preventing the port of Maracaibo, which is also the principal city, from being a regular port of call for ocean vessels. The lake has many points of similarity with the formation of the delta of the Orinoco in the far eastern part of Venezuela, both in hydrography and in general character. Innumerable rivers and small streams drain into the lake from all sides. The southern part has hundreds of streams comparable to the "caños" or sloughs, with open lagoons and swamps, fringed with forests heavily watered by rains. On the east and west shores there are stretches of higher ground between the swamps and frequent grassy plains like the llanos. With the exception of the extreme northeastern end, the basin is entirely surrounded by high ranges of mountains. The principal rivers traversing these plains are the Motatan, in the region of Trujillo; the Chama, which flows down from the Andes in the region of Merida; the Escalante, toward the southwest between the great swamps of Onia and Mortuto; and the Catatumbo, which, with its larger tributaries, the Zulia, Tarra, and Socavo, rises in the Colombian Andes to the south and southwest. The mouths of all these rivers are deltaic in character, and all are navigable to a greater or less extent, those used by river steamers for considerable distances being the Escalante and the Catatumbo and Zulia. The principal cattle plains which rise from the lake basin are those found on the lower slopes of the Serrania del Empalado to the east. Farther to the north, both on the east and on the west side of the lake channel north of Maracaibo, are open dry lands broken by brackish lagoons during and just after the rainy season, the shores of the channel being low, flat, and with little vegetation on account of the greatly diminishing rainfall near the coast on the Coro side and farther west toward the Goajira Peninsula, which is quite arid throughout most of its extent.

The Venezuelan Andes stretch from the Colombian frontier for 300 miles northeastward via San Cristobal, Merida, and Trujillo into the State of Lara, forming the highest land in the whole country. There are two main divisions of this mountain group—(1) the Portuguesa chain south of Barquisimeto and (2) the Cordillera de Merida, constituting the higher and more important part. The Portuguesa chain reaches its greatest elevation (13,100 feet) in the south near the sources of the Tocuyo River, the northern portion rising to only about 5,000 feet. A slight break in the mass is caused by the valley of the Bocono, beyond which the Cordillera de Merida begins with peaks of nearly 13,000 feet on the north, rising to a maximum in the center, where the summits of the Sierra Nevada de Merida have an elevation of about 16,400 feet; the highest peak, La Columna, is 16,423 feet above sea level. To the south the elevation decreases again, until, on the borders of Colombia, the watershed is less than 5,000 feet above sea level. The streams of this chain, with its steep outer

flanks so characteristic of the Andes, naturally belong, on the eastern side of the range, to the drainage area of the Upper Apure, which feeds the Orinoco lower down toward the east, and, on the western side, to the Lake Maracaibo Basin. But there is a succession of longitudinal valleys within the chain, the chief of these being that of the River Motatan, which rises north of Merida and flows northward through Trujillo to Lake Maracaibo; that of the River Chama, which has its source in the snows that supply the upper waters of the Motatan, though this stream runs southward past Merida and then turns sharply northward to reach the south shore of Lake Maracaibo; and that of the River Torbes, which runs southwestward by San Cristobal and turns there to the east, to empty into the Uribante, a tributary of the Apure.

Every type of climate and vegetation occurs within the zone described—the semiarid sandy plains of the north near the Caribbean Sea; the intensely tropical lower levels surrounding the southern shores of the lake, covered with dense forest and jungle; the intermediate levels of the mountains, with fertile valleys where cereals are grown; the grass-clad slopes and summits of the higher hills and mountains; and then, above, the snow of the “paramos” and peaks of the Sierra Nevada. In between are found small hot gorges supporting only cacti and acacias. The best and most accessible agricultural lands are along the southern shore of the lake in the region of the ancient town of Gibraltar and Santa Maria. The vast region to the west of the lake is the least inhabited and explored, but it has been penetrated during the past 10 years by prospectors for petroleum, development in this line being about the only activity in this region except on the immediate shores of the lake itself, around which there are numerous small villages inhabited by Indians and “mestizos.”

CLIMATE.

Here, as elsewhere near the Equator, climate is a matter of elevation. The entire Maracaibo Lake Basin is hot, and extreme tropical conditions prevail, the same being true of the valleys of the rivers. Maracaibo is characterized in Venezuela as the hottest place in the country; it is the hottest large city, but the temperature of the llanos at San Fernando de Apure is higher on the average, as is also that of Ciudad Bolivar down the Orinoco. At an elevation of 3,000 feet above the lake a semitropical climate is found. At 4,000 feet it is much cooler and tropical diseases disappear. At 6,000 feet wheat is grown.

The average high temperature for Maracaibo is 95° F., the average minimum 68° F., and the average mean temperature 82.4° F. The average high humidity of the atmosphere is 98.1°, the average low humidity 74.09°, and the average mean humidity 97.19°. These figures may be taken as a fair average, also, for the lowlands surrounding the lake.

The records of the meteorological station in the city of Maracaibo show the following rainfall for the year 1917:

Months.	Duration (entire month).	Maximum in any one day.	Total pre- cipitation during month.
	<i>H. m.</i>	<i>Inches.</i>	<i>Inches.</i>
January.....	None.	None.	None.
February.....	None.	None.	None.
March.....	0 2	0.2047	0.212
April.....	16 4	.3818	.996
May.....	27 5	.8622	3.850
June.....	18 7	.2519	1.060
July.....	47 0	1.0787	3.755
August.....	30 1	.7245	3.933
September.....	47 3	1.4330	3.952
October.....	No data.	.5078	1.706
November.....	11 0	1.6732	3.031
December.....	2 2	.5708	.966
Total.....	198 24	.....	23.451

The rainfall increases very considerably toward the southern part of the lake, being around 42 inches per annum in the lowlands along the southern margin and up the valley of the Catatumbo River. It diminishes toward the north, northeast, and northwest, the lands taking on the same characteristics as those of the Coro region and the Goajira Peninsula.

Storms of short duration are liable to occur during the summer and fall months. There is a strong and steady trade wind during the months of January, February, March, and sometimes along into April. Very peculiar meteorological conditions are found in the lake region. A vivid and continuous lightning is seen at night over the southern end of the lake, being generally described in Maracaibo as seen "near the mouth of the Catatumbo River." The flashes seem, however, to extend all along the line of the mountains, which rise to a height of 14,000 to 15,000 feet at a comparatively short distance back from the lake. These lights are called by mariners the "Maracaibo lights," and can be seen from the sea to the north out of range of any existing lighthouses. A possible explanation seems to be found in the fact that the atmosphere over the bare mountains cools rapidly at sunset, while the heavily charged hot air of the basin of the lake region rises, so that masses of air of different potentials meet at a great height and emit huge electrical sparks, visible, like lightning, for hundreds of miles. In any case, the flashes are seen every night, from sunset to sunrise, with little variation in brilliance.

HEALTH CONDITIONS.

Malaria is very prevalent in and around Maracaibo, and epidemics follow severe rainy seasons in the fall of the year, with attendant diseases peculiar to the Tropics. There appear to have been no cases of yellow fever in Maracaibo for the last five or six years, but this disease was formerly epidemic from time to time and occurred also in Cucuta, across the Colombian border. Certain spots have a local reputation for malaria, such as the sugar estates on the southern shore of the lake and in the Catatumbo River Valley.

Residents coming from the north nearly always suffer from "climatic fever" within a few months after arrival, few escaping some form of malaria. Careful precautions of screening and sanitation

do much to prevent the disease. The principal residence section of Maracaibo is the suburb of Bellavista, 15 minutes by electric car line from the city proper and located at an elevation of 140 feet above sea level, where the benefit of the breeze from the water is felt to a greater extent than in the city. Clothing should be as light as possible—Palm Beach cloth, white duck, drills, etc., being most used for dress.

POPULATION—DISTRIBUTION BY STATES, DISTRICTS, AND CAPITALS.

The State of Zulia is divided into nine districts, of which the capital towns are Santa Rita, San Carlos (del Zulia), San Rafael, Maracaibo, Altagracia, Sinamaica, Libertad, Bobure, and Concepcion. All the districts, except Maracaibo and Sinamaica, have a very small population—between 5,000 and 7,000 each. According to the official estimate of 1915 the city of Maracaibo had a population of 48,490, although the national census of 1891 gave the entire district only 37,551, including the city. The place has progressed rapidly, until it is now the third city in size and the second in commercial importance in Venezuela. The district of Sinamaica, situated to the north of Maracaibo, has an Indian population composed of 68,707 Goajiras.

Santa Rita and Altagracia are on the opposite shore of the lake from Maracaibo. San Rafael is on Majan Island at the entrance to the channel of the lake. Sinamaica lies farther to the northwest, between Lake Sinamaica and the sea, in the region of the River Limon. San Carlos del Zulia is on the River Escalante, opposite Santa Barbara, the rail point for Merida, in the extreme southern part of the State. Libertad is in the center of the district of Perija, to the west of the lake, on the River Opon—the town being formerly known as Machiques. Bobure, capital of the district of Sucre, is on the eastern shore of the lake, and Concepcion on the western side, just south of Maracaibo. All the State is connected with Maracaibo by the waterways of the rivers and the lake, service being by small lake and river steamers of the shallow-draft type and many small sailing schooners and canoes.

The State of Trujillo occupies the eastern central part of the territory described, having a small frontage on the lake and being bounded on the northeast by the State of Lara, on the east by the State of Portuguesa, on the southeast and south by the States of Zamora and Merida, and on the southwest by the State of Zulia. There are seven districts, of which the towns of Betijoque, Bocono, Carache, Escuque, Trujillo, La Quebrada, and Valera are the capitals. The most populous districts are Bocono, Carache, and Trujillo, the first two of these having more than 33,000 people each and Trujillo about 26,000. The others have from 12,000 to 14,000 each.

Carache is in the extreme northeastern part of the State on the headwaters of the River Bucares, lying to the west of the main range of the Cordillera. The important town of Bocono lies east of Trujillo, on the eastern side of the main range. Valera lies on the River Motatan, just south of the present terminus of the La Ceiba Railway, and is on the main route to Trujillo. Betijoque is due west of Valera and Motatan in the center of large plains that lie south of

the railway. Escuque is just to the south. La Quebrada is in the southeastern part of the State, in the mountains.

The State of Merida lies entirely south of Lake Maracaibo, and, like Trujillo and Tachira, is one of the mountain States of the Republic, being traversed by the main range of the Venezuelan Andes, called the Cordillera de Merida. The State is divided into eight districts, of which the towns of Egido, Merida, Timotes, Mucuchies, Bailadores, Lagunillas, Tonondoy, and Tovar are the capitals. Timotes is in the extreme northern part of the State (almost on the line with Trujillo), on the headwaters of the River Motatan. Mucuchies lies farther south, in line with Merida. Ejido is very near Merida, also on the Chama River, while Lagunillas is in the central part of the State. Bailadores and Tovar are close together in the far southwestern part. Tonondoy lies in the extreme northern part, nearest Lake Maracaibo. The State of Merida is cut off from Lake Maracaibo by the State of Zulia, communication with the lake being by means of the Santa Barbara-El Vigia Railway, which connects with navigation on the Escalante River at Santa Barbara.

The Andean State of Tachira, of which San Cristobal is the capital, occupies the extreme southwestern corner of Venezuela, its entire western border being the international line with the neighboring Republic of Colombia. A long, narrow strip of the State of Apure forms the southern boundary of Tachira; it touches Zamora for a short distance on the east, while the eastern and northern boundaries are the States of Merida and Zulia. There are nine districts, of which the capitals are the towns of San Juan de Colon, San Antonio, Tariba, Independencia, Rubio, La Grita, Lobatera, San Cristobal, and Pergonero.

Pergonero lies in the extreme eastern part of the State on the headwaters of the Uribante River, which is on the eastern watershed and flows into the Apure in the State of Apure. San Antonio lies in the extreme western part, almost on the line with Colombia, just across from the Colombian town of Frontera on the Tachira River. Rubio is just to the southeast of San Antonio. Tariba lies just to the north of San Cristobal on the Torbes River. Lobatera is farther to the north, on the trail leading to the terminus of the Tachira Railway at La Uraca. La Grita lies in the northern part of the State, on the headwaters of the River La Grita, which flows into the Zulia. San Juan de Colon lies on the road between San Cristobal and La Uraca. The most populous districts are San Cristobal and La Grita, with 19,000 and 18,000 people, respectively.

CITIES AND TOWNS—COMMERCIAL DISTRIBUTION AND TRADE ROUTES.

MARACAIBO.

Maracaibo—capital of the State of Zulia and the commercial center for the entire district, as well as for the Colombian frontier city of Cucuta and its surrounding territory—was founded by the German, Alfinger, in 1529. The original town fell into decay, and the present one dates back to 1571, when Don Alonzo Pacheco founded it as Nueva Zamora. The Indian name outlasted the Spanish title. To-day Maracaibo is the second port of the Republic and has an export

trade greater than that of La Guaira. It is located on a fine bay, with a good natural harbor, but the difficult navigation of the mouth of the channel leading from the lake to the sea prevents the city from becoming a real maritime port. Many schemes have been advanced for dredging one of the four channels and so providing a permanent entrance for seagoing steamers, but the plans call for work of great magnitude, and the constant silting up of the waterways presents many difficulties. An alternative idea is that of a railway to the port of Cojoro on the Gulf of Venezuela. The length of this line would be some 100 miles.

While it possesses a water supply and electric lighting system, the chief needs of the town are a good drainage system, paving, and a better water supply. The place has grown very rapidly and buildings are more for use than ornament.

The Maracaibo Electric Light Co. is an American corporation founded in 1886. The power is provided by steam turbines driving generators of 1,000-kilowatt capacity. The voltage is 110, 220, and 2,200, 3-phase, 60-cycle, alternating current. Current is supplied for the electric railway and 6,000 lights, besides power for several small factories and shops. Current is sufficient for 14,000 more lights. The company is capitalized at \$336,000, divided into shares of \$100 each. Stock was quoted on the Maracaibo and Caracas markets in December, 1920, at 375 to 400 bolivars (\$72 to \$77).

In May, 1920, the officials of the Maracaibo Electric Street Railway accepted an offer of 500,000 bolivars (\$96,500) for its line in the city of Maracaibo and all its equipment, this offer being made by a syndicate, including about 50 per cent of American capital, which planned to remodel the old line and increase the service facilities. The property consisted of about 7 miles of single track, extending from the suburb of El Milagro along the lake front through the city proper, and again along the water front to the suburb of Los Haticos. Six new cars were purchased, old cars were rebuilt, and about \$150,000 had been spent by the end of the year in improvements to the system, which now operates on a 10-minute schedule.

The old steam tramway line to Bellavista has also been equipped with electric power. This is a separate company, capitalized at 400,000 bolivars (\$77,200), with shares at 400 bolivars (\$77.20) each, now quoted at 500 to 505 bolivars (\$96.50 to \$97.46).

There are three clubs—the Alianza, the Comercio, and the Cosmos. Nine hotels accommodate the traveler, three of which are counted the larger ones, namely, the Hotel Los Andes, the Del Lago, and the Zulia. With the exception of a few desirable and cooler rooms, accommodations are poor, there is little privacy, and the food served leaves much to be desired. The Hotel Los Lagos is usually preferred, because it is near the water front and therefore more comfortable than the others, as it receives the breeze from the lake at times.

The wharf and warehouses are owned by the Government and are being reconstructed and improved. (See "Harbor and dock improvements," p. 198.)

The erection of the towers for the new wireless station at Maracaibo has been completed and the apparatus installed. The station is equipped with a 5-kilowatt set with a rotary synchronous spark system. The towers are 50 meters high and the normal sending radius by day will be about 800 miles and by night about 1,600 miles.

The importance of Maracaibo lies in the fact that it is the concentration point for all the export and import trade of the entire Andean region, comprising the States of Zulia, Trujillo, Merida, and Tachira, and also the transfer point for the traffic of the Cucuta region of Colombia. Here are collected all the export products of the whole lake basin and the surrounding mountains, and here goods are received to be reshipped to the interior. Maracaibo is the commercial and financial center of the entire district.

OTHER TOWNS IN STATE OF ZULIA.

While most of the settlements around the lake consist of a few palm-leaf huts and a few adobe buildings of one story, or houses built on piles after the ancient Indian fashion, there are several towns of importance. Altigracia, immediately opposite Maracaibo on the eastern shore, is the largest, and has a considerable importance on account of its agricultural products and its fishing fleet, whose catches are sold principally in the capital. Santa Rita, not far to the south, also on the shore of the lake, is in the midst of a fine goat-farming district and also possesses extensive coconut plantations which yield a considerable profit.

At the extreme southeastern corner of the lake there is a town that bears a famous name and has itself been of note in Venezuelan colonial times. This is Gibraltar, founded in 1597 by Lidueña. The region is now being developed with cane plantations. Cacao and tobacco made the region famous, and at one time it was the leading center of the lake region. It was taken, sacked, and reduced to ruins by the Motilones Indians, but by 1666 it was again so flourishing that the pirate Henry Morgan considered it worth taking. Later, the town, which had again been rebuilt, was sacked a third time by Gramonte.

San Carlos de Zulia, on the Escalante, is important by virtue of the through traffic between the "haciendas" of the interior and the lake. Like other river towns of the region, it is unsightly, very unhealthful, and not progressive.

For population and revenue Trujillo stands first of the Andean States, Tachira second, and Merida third, though the last mentioned is the largest in area.

TOWNS AND ROUTES IN STATE OF TACHIRA.

The capital of the State of Tachira is San Cristobal, founded on the left bank of the River Torbes in 1561. Although, in approaching the town, the traveler who does not trace his route on a map would consider himself still on the Maracaibo side of the watershed, the waters of the Torbes flow around the mountains behind the town to join those of the Uribante, a subtributary of the Orinoco via the Apure River in the State of Apure. The main watershed of the Venezuelan Andes at this point is probably less than 4,000 feet above sea level, and San Cristobal is well situated in respect to traffic from the western llanos to Zulia or Colombia. The town is well located in a valley partly surrounded by the river, which, at times of flood, makes communication difficult.

From San Cristobal roads lead to San Antonio on the Colombian frontiers; to the llanos down the Torbes and Quinimari Valleys; to

Uraca, the terminus of the Tachira Railway; and to Merida, via La Grita, Tovar, and Bailadores. Fifteen miles down the valley is the town of Rubio, where there are some of the largest and best coffee plantations of the country, equipped with modern machinery for cleaning the beans. Coal and (it is said) silver are found in the vicinity, and the Tachira Petroleum Co., a local concern, has for many years supplied small quantities of illuminating oil from oil seepages found near by. (See p. 101.)

A good deal of the produce of these parts is shipped through Colombia in bond to avoid the more difficult route overland to the end of the Tachira Railway at La Uraca—the traffic passing through the frontier town of San Antonio, on the Tachira River, across from the Colombian town of Frontera, which is connected with Cucuta by a branch of the railway that runs down to the Zulia River, which flows into the more navigable Catatumbo. In former times cacao, indigo, and coffee were grown in the neighborhood, but latterly, with the growth and importance of San Cristobal and Cucuta, the lands are more used for pasturage, though some sugar cane is planted.

The other main export route is from San Cristobal, via the towns of Lobatera and Colon, to the end of the Tachira Railway at La Uraca. Lobatera is about 3,000 feet above sea level, San Cristobal being at an elevation of 2,722 feet. Colon is a point on the road from Uraca where there are several "hoteles," La Uraca being about 10 miles distant, on the edge of the hot lands where cacao is the principal product.

Both the Encontrados road and that to Merida lead through the small town of Tariba, about 3 miles east of San Cristobal, on the north bank of the Torbes River. The flooded river during the rainy season is a great hindrance to traffic, but new bridges are being built and better highways constructed.

La Grita lies a day's ride (about 40 miles by trail) up the Torbes Valley and across the pass ("páramo") called El Zumbador, 8,000 feet high, where a trail branches off to the east toward Pregonero, capital of the Uribante district, located in a valley whose products range from potatoes and wheat at the top to cacao and sugar at the bottom, with coffee on the intermediate levels of the valleys. On the eastern side of the range here are also the principal cattle ranges that supply most of the beef consumed in the Andean region. The district needs roads and at present is rather isolated and little visited.

Vargas, or El Cobre, is a small village on the northern, or western, side of the pass, its old name being said to refer to copper mines in the vicinity that were worked in colonial times by the Spaniards. Forty miles is the estimated distance from Tariba to La Grita, situated on high gravel mesa, or tableland. The town was founded in 1576, following the policy of the Spanish colonizers of locating back from the coast in the more healthful altitudes, where they were also comparatively free from piratical invasion. It has suffered frequently from earthquake shocks. Its products include wheat, wool, cotton, and tobacco from the surrounding country, and it is, in a way, a local or district market center for the region. The elevation of 6,000 feet above sea level makes it one of the most healthful places in Venezuela and allows the cultivation of temperate-zone fruits such

as apples, apricots, peaches, and the like, so seldom found in Venezuela.

A few miles down the river toward Uraca is Seboruco, with its ancient copper mines, worked with Indian slave labor by the Spaniards but not known to have been operated in modern times on a commercial scale.

TOWNS AND ROUTES IN STATE OF MERIDA.

The State of Merida occupies the center of the Venezuelan Andean region but includes within its boundaries the highest peaks and at the same time the hottest valleys in the country. The great variety of climate naturally provides a wide range of products, but the difficulties of the topography, combined with a general lack of good roads, with the resulting high cost of transportation, have kept the country largely undeveloped.

Merida was founded in 1542. It is the seat of the Bishop of the Andes. The city is built on a high plateau very much like that of La Grita, between the Rivers Mucujun and Chama, and above to the east are the snow-capped peaks of the Sierra Nevada de Merida, while a lower but equally steep range shuts off the valley to the west. The perpetual snow line of the mountains is 15,000 feet above sea level. The elevation of the place is 5,415 feet above sea level, and the town has often suffered from earthquakes, being rebuilt, however, from time to time. The fertile lands of the valley of the Chama furnish the principal wealth of this neighborhood. In this valley lies Ejido, but beyond Ejido the valley becomes more barren toward Lagunillas, famous for its mineral lake, which contains large quantities of trona, called "urao." Two or three miles below Lagunillas is one of the worst bits of road in the Andes, where the Chama is crossed over the famous Puente Real, a wooden bridge. Beyond Estanques the main valley narrows down to a gorge, and the road climbs over the divide to the valley of the Mucuties, with its cacao plantations. Here two roads divide, one going down to the Zulia plains via the Chama Valley and El Vigia, and the other up the River Mucuties to Tovar.

Tovar forms a local market center for the produce of the coffee and cacao plantations of the valley, but beyond it Bailadores marks the lower limit of the wheat fields that one finds along the top of the Mucuties ravine. Outside of the capital Tovar is the most important trading place, and nearly all banks and business houses of Maracaibo maintain branches or agencies there.

To the north of Merida the Chama Valley has some coffee plantations, but the main highway toward the north soon leaves the valley and climbs to Mucuchies, the highest town in Venezuela, with an elevation of 10,000 feet above sea level; the region is one of pasture land and potatoes, the elevation being too high even for wheat.

To reach Trujillo over this road one must cross on mule back the famous Mucuchies or Timotes Pass, which is 14,500 feet high. In the rainy season snow is often found on this pass and travel is attended with cold and great discomfort. At Timotes, the first town on the north side of the pass, tropical plants again make their appearance, but the valley is chiefly used for the grazing of cattle.

TOWNS AND ROUTES IN STATE OF TRUJILLO.

Trujillo, founded in 1556, at an elevation of 2,640 feet, has a semi-tropical climate, and its wealth consists of coffee and sugar-cane plantations in the valley in which the city is situated. On his Lake Maracaibo raid Gramonte took the place in 1678. The country is very difficult on account of the river gorges, and fords during floods make communication uncertain over the main route to Motatan, the present terminus of the La Ceiba Railway, distant 25 miles from the capital. Another road goes by the way of Valera, an important town on the road to Merida.

Although Trujillo is the capital of the State and Motatan the present terminus of the La Ceiba Railway, it is in Valera that the most important commerce of the State is carried on—a fact due mainly to the more advantageous position of the town as regards its surrounding fertile valleys of the foothills. This is the most developed region of the State, and most of the other products of the interior pass through the hands of the merchants of Valera on their way to Maracaibo for export. The town has a population of about 10,000, and recent oil-drilling activities in the neighborhood have added to its trade and importance. Escuque is famous for its good coffee, and Betijoque is now the scene of active drilling operations for petroleum.

Carache is a small village farther north and near the end of the Andean region proper, situated in a dry valley little used except for goat farming and a few cattle, but the hills and valleys of the surrounding country grow wheat, sugar, and coffee. From the bare hills above the town may be seen the expanse of Lake Maracaibo on a clear day.

Northwest of Carache there is an almost unexplored area, extending down the flanks of the range called El Empalado to the lake shore. Divi-divi exists in the forests.

ECONOMIC POSSIBILITIES OF ANDEAN STATES.

The entire Andean region of the three States mentioned has possibilities in the production of coffee and cacao on the intermediate levels of the mountains in the moist valleys, cotton in the small, hot valleys lower down, and wheat and fruits on the upper levels; but all is dependent upon transportation, and the present program of the various States in road building will lead to extensive development in the future. As it is to-day, the Andean region furnishes 50 per cent of the coffee of Venezuela, the annual normal production being 500,000 bags. In their more barren and difficult country the people of this mountainous region have had to work harder for a living than their compatriots of the coast and lowlands. Descendants of the old Spanish "conquistadores" and the mountain Indians, they form a hardy race.

CHARACTERISTICS OF INHABITANTS.

The racial mixture of the Negro does not exist in the Andean region of Venezuela, as the Negroes of the coast do not penetrate into the high mountains, preferring to remain in the hot lands of the coast and river valleys. The Lake Maracaibo region has a predominating strain of Indian blood, and the Goajira Indian population of the northwestern part is being slowly absorbed in and around the city

of Maracaibo. These Indians and remnants of other tribes have always lived along the shores of the lake. In the southern part are found the famous Motilonos Indians, a warlike tribe ranging over a great territory of Venezuela and Colombia and still causing trouble in the outlying districts recently penetrated by oil companies in exploration and drilling work. In the higher mountains there were numerous tribes of Indians whose blood was mingled with that of the Spaniards, the resulting mixture being the type of "Andino" of to-day. The chief labor supply of the new sugar plantations of the southern lake district is from the Goajiras.

In the cities and towns throughout the entire region are found numerous descendants of the old Spanish colonial families, which to-day represent the professions and are the bankers and merchants. These people travel to Europe and the United States, many of them have been educated abroad, and in their homes is found every modern comfort and convenience. This element represents about 15 per cent of the total population.

LIVING CONDITIONS—MODERN IMPROVEMENTS.

Although settled by the Spaniards before any permanent settlements were made in the United States, the towns of the Andean region of Venezuela have remained isolated on account of their great distance from the coast and the difficulties of the ground to be traversed. The better houses and buildings are of adobe or kiln-baked soft brick, plastered and painted on the outside. Streets are all narrow and paved with cobblestones. Inadequate water supplies have been brought down to the towns in crude aqueducts and ditches, with little attention paid to modern systems of drainage and sewerage. The first modern improvements have been the erection and installation of electric lighting plants, which are now found in Maracaibo, Trujillo, Valera, Merida, Tovar, San Cristobal, Rubio, and San Antonio. Ice plants are found in Maracaibo, Valera, and Cucuta (Colombia). Maracaibo and Cucuta have electric street railways. The same two cities have modern breweries.

TRAVEL CONDITIONS.

The main travel routes for the interior—to Trujillo, Merida, San Cristobal, and Cucuta—all begin with lake-steamer transportation at the port of Maracaibo. The routes are:

For Trujillo.—To La Ceiba, on the southeastern shore of the lake, about 90 miles by water from Maracaibo; thence over the La Ceiba Railway to Motatan; thence by road.

For Merida.—To Santa Barbara, on the Escalante River, about 120 miles south of Maracaibo, by steamer; thence over the Santa Barbara-El Vigia Railway; thence by trail.

For San Cristobal and Cucuta.—To Encontrados, on the Catatumbo River, about 140 miles south and west of Maracaibo; thence over the Tachira Railway to La Uraga, for San Cristobal, and thence overland to Cucuta, or on up the Zulia River to Puerto Villamizar, and by railway into Cucuta.

From La Ceiba the running time over the railway to Motatan is four hours, but from there it takes seven hours of hard riding to reach Trujillo, via Valera or over the upper trail. Pack trains re-

quire three or four days to make the same distance when loaded with coffee, going down to the railhead at Motatan. From Trujillo the trip can be made on mule back through the length of the Andean region, via Merida and San Cristobal and over to Cucuta, in Colombia. Over the shortest possible road the trip from Trujillo to Cucuta can be made on mule back in about 10 days, without stopping for a day in any of the towns and with the best saddle and pack-animal stock to be procured in the region. It is often necessary to travel from 10 to 12 hours on account of the lack of accommodations for the night. The small inns, called "posadas," are not made for comfort, and the traveler by this mountain route will do well to carry his own camp bed and articles of food. Food along the way is wholesome and plentiful, but of the plainest sort and poorly prepared.

There are three railways in the district of Maracaibo, leading from lake or river points for lake steamers to the foot of the mountains in the direction of the capitals of the States of Trujillo, Merida, and Tachira. These three lines have not as yet been connected with the capitals, because of increasing difficulty and cost of construction as the higher levels and more broken ground have been reached in the work of construction.

The Ferrocarril de La Ceiba, already mentioned, has about 60 miles of track, ending at Motatan, 20 miles from the capital, Trujillo. It is owned by a private corporation. A cart road runs from Motatan to Trujillo, with a branch running to Valera, which is only 6 miles by trail from the rail terminus at Motatan. There are no other wagon roads in the State.

The Ferrocarril de Santa Barbara, owned by the Venezuelan Government, runs from the river port of Santa Barbara to El Vigia, 60 kilometers (1 kilometer=0.62 mile). Pack trains take five days for the trip from there over the trail to the capital, Merida, but travelers can make the trip in two hard days' ride on mule back. Distances in the mountains can not be measured by actual mileage, but are calculated by the number of hours or days of riding, varying according to the nature of the country covered. The roughest country in the entire route is traversed between El Vigia and Merida, via Lagunillas. Some travelers prefer the route to Merida from Maracaibo via Valera, from which place it takes three days of hard riding to reach Merida; the route is higher and less subject to interruptions by swollen rivers and gorges and is therefore preferred in the rainy season. The new wagon (cart) road has been recently completed from Merida as far as Lagunillas by the State government as part of the new and energetic road-building program of the entire country. This road will be completed as far as the end of the railway in about two years more, according to present estimates, which include the purchase and installation of a number of large steel bridges.

The Ferrocarril de Tachira, owned by a private corporation, runs from Encontrados, the river steamer port on the River Catatumbo, to Estacion Tachira, 120 kilometers. There is a cart road from Estacion Tachira to San Cristobal, via Colon and Tariba, with a branch to the Colombian frontier at Urena. Just across the bound-

ary from Urena in Colombia is the railway station of Escobal, about 30 minutes by train from Cucuta. This is the route usually taken by travelers between Maracaibo and Cucuta. The cart road has recently been put into repair, and automobile service can be obtained by telegraphing ahead for a car from Cucuta, the run taking about seven hours.

The Great Western Highway is now under construction from Caracas to San Cristobal, via Valencia, San Carlos, Guanare, Barinas, and San Miguel, through the pass of the Uribante River and across the southern watershed. The Caracas-Valencia section (an old road) has been repaired and put into better shape, as has also that from Valencia to San Carlos on the plains. From here the work is actively progressing in sections, construction having been started from the San Cristobal end in 1918, when 10 miles were built. This road has now reached kilometer 27 from San Antonio de Caparo in the State of Tachira, and work is being carried forward at different points where heavy fills or banks have to be made and bridges installed.

The other means of communication are the mule trails. To convey some idea of the great difficulties encountered, it may be stated that the machinery for the electric light plant of Merida had to be carried by 100 peons from the railhead, 50 carrying and 50 resting, the journey consuming 10 months' time. Riding animals make the distance in three days.

FREIGHT COSTS.

Freight rates in bolivars (1 bolivar=\$0.193) on each bag of coffee (which is the staple product of this region) from the centers of production to the railway shipping points are as follows:

	Bolivars.
Rubio to Estacion Tachira.....	6 to 8
San Cristobal to Estacion Tachira.....	4 to 5
Merida to Los Canitos.....	7 to 9
Tovar to La Uraca.....	6 to 7½
Torondoy to Bobures.....	3 to 4
Trujillo to Motatan.....	4 to 5
Bocono to Motatan.....	7 to 9
Valera to Motatan.....	2 to 3

The rates from shipping points of the railways to Maracaibo, including steamer freight costs, cartage, commissions, and other expenses, are as follows:

	Bolivars.
Estacion Tachira (La Uraca) to Maracaibo.....	8.05
Puerto Villamizar (Colombia) to Maracaibo.....	10.50
Motatan to Maracaibo.....	6.20
El Vigia to Maracaibo.....	4.70
Bobures (by steamer) to Maracaibo.....	1.40

The rate from Cucuta to Puerto Villamizar by railway (this being the route over which all of the coffee and cacao from Cucuta is shipped to Maracaibo, via the Rivers Zulia and Catatumbo) is \$1.08 per sack. Freight either way has to be transferred at Encontrados, as the steamers operating on the Zulia are of smaller size and draft than those from Maracaibo up the Catatumbo to Encontrados. The above rates are for bags weighing 46 kilos (1 kilo=2.2046 pounds)

for Merida and Trujillo coffees; 58 kilos for Tachira coffees, and 60 kilos for Cucuta coffees.

EFFECT OF ROAD BUILDING ON MARKETS FOR GOODS.

In recent years, under the administration of Gen. Gomez, interest has been manifested in road building through these mountains and rough regions. Roads are actually being built in several places over important trade routes; but progress has been slow on account of the difficulties presented by the mountainous nature of the country, the streams, etc., the prevailing lack of sufficient funds, and the limited labor supply available. Road-making machinery is not used, principally because of the nature of the ground and the cost of such machinery laid down on the work, but also on account of the general lack of knowledge concerning it. Another reason is the constantly changing character of the ground to be covered, the nature of the formations encountered, etc., there being places where machines would not meet the requirements of the work. A great deal of rock work has to be done, and dynamite is used in considerable quantities. After the completion of the roads from the Andean capitals down to the present rail points, there will be an increased market for automobiles and light motor trucks, as well as for coffee shelling and cleaning machinery, sugar-cane machinery, and other machinery on which freight will have to become reduced to a point where it will be economically possible to introduce it.

However, the so-called highways are not such in the sense in which the word is applied to roads in the United States. In Venezuela they are really narrow cart roads with maximum grades of 6 to 9 per cent, and sharp turns; and the route always follows the line of least resistance along the contour of the mountain sides. With the specifications of construction now being used it is not thought that the automobile truck of large or even small capacity will be used for freight transportation in competition with the common two-wheeled one-mule cart of the country, which, in the Caracas and Puerto Cabello-Valencia districts, competes with the existing railways, even on long hauls like that between Caracas and Valencia.

SALESMEN'S ROUTES.

The usual thing has been for salesmen from abroad to transfer at Curaçao from the ocean steamer (proceeding either east or west along the Caribbean coast) to the smaller steamers that run to Maracaibo, which is the center of the district and the place where most of the goods and supplies of the interior centers are purchased from the importing wholesalers established there. However, there are a few firms that import direct, principally through export commission houses, and most salesmen visit Cucuta, either coming back to Maracaibo for ocean transportation east or west, via Curaçao, or continuing on overland into Colombia for upper Magdalena River points. The route would depend entirely upon the nature of the business—that is, whether it is work for an export commission house, introductory work for manufacturers direct, or the handling of some special line, such, for instance, as drugs and medicines.

THE PORT OF MARACAIBO.

OCEAN STEAMSHIP SERVICE.

Situated on a wide bay on the west shore of the wide channel connecting the lake proper with the Gulf of Venezuela and the Caribbean Sea, the port of Maracaibo is some 20 miles from the entrance to the channel and about 240 nautical miles by water from the transshipping port of Willemstad, Curaçao, Dutch West Indies, with which it is connected by regular sailings of two steamers of the Red "D" Line of steamers, one steamer chartered by the Caribbean Steamship Co., of New York, and one steamer of the Royal Dutch West India Mail—all of which connect with the ocean-going vessels of their respective companies at Willemstad, for transfer of cargo and passengers. Another small 600-ton steamer of the Red "D" Line does not proceed to New York, but calls only at Willemstad and La Guaira, returning to Maracaibo as a regular route. Communication with Europe is effected through transshipment to vessels of the British, Dutch, Spanish, French, and Italian companies at Curaçao (Willemstad). During the war the New Orleans & South American Steamship Co. (W. R. Grace & Co.) also operated a small vessel between other Venezuelan ports, Curaçao, and Maracaibo, transshipments being made to New Orleans.

There is also the service of the Venezuelan Navigation Co., a national company operating a fleet of small steamers in the coastwise trade of Venezuela and connecting all ports of the country, including that of Ciudad Bolivar (up the Orinoco) via Port of Spain, Trinidad, British West Indies. Three steamers, the *Manzanares*, of 1,200 tons, the *Guarico*, of 900 tons, and the *Venezuela*, of 950 tons (an old side-wheel boat now laid up in Puerto Cabello for repairs), ordinarily operate in the coastwise trade, making Maracaibo a regular port of call, though no definite schedule has been maintained during the last year on account of frequent repairs to the boats of the fleet.

LAKE BOATS.

The lake fleet consists of four shallow-draft, stern and side wheel vessels, as follows: *Progreso*, of 300 tons; *Nuevo Mara*, 150 tons; *Nuevo Fenix*, 150 tons; and *Villamizar*, 150 tons. Weekly round trips are made to and from the following lake and river ports: La Ceiba, to connect with railway to Motatan, for Trujillo; Santa Barbara, to connect with railway to El Vigia, for Merida; to Encontrados, to connect with railway to La Uruca, for San Cristobal. Connection is also made here for the steamers of the company operating on the Zulia River from Encontrados to Puerto Villamizar.

The equipment of the Venezuelan Navigation Co. also comprises a dredge for port and river-channel work, a 40-ton tugboat, and a marine railway and repair shop in Maracaibo.

Lake and river ports smaller and less important than those mentioned are made en route—schedules varying according to freight and passenger traffic offerings. The trip from Maracaibo to Encontrados often takes three or four days, and even much longer during the season of low water in the river, as there is always the danger of running aground and being held up.

A number of sailing schooners and sloops carry on an intermittent traffic with all lake and river points also, and schooners from Curaçao cruise around most of the lake in search of trading cargoes of coffee, cacao, hides and skins, divi-divi, etc.

HARBOR AND DOCK IMPROVEMENTS.

Wharves and warehouses at Maracaibo are owned by the Venezuelan Government. The old dock is now undergoing extensive repairs. The old piling is being replaced with concrete piling reinforced with old steel rails, and wharf accommodations are being made for two large vessels, besides the arrangements for the coasting and lake traffic of the schooners.

New and old warehouses along the wharf can accommodate about 8,000 tons of general merchandise, and the Government is planning to increase greatly this storage capacity in view of the large business in transshipment of goods to and from the interior centers and Cucuta in Colombia.

COASTWISE TRAFFIC OF MARACAIBO.

Goods, in coastwise traffic, to the amount of 98,412,694 bolivars (\$18,993,650) entered the port during 1919. These figures include the value of all the products concentrated at the port from the entire lake and river regions which communicate with the interior. Coffee forms more than half of the total, amounting in 1919 to 59,170,999 bolivars (\$11,420,003). Other products from the interior were: Sugar, 1,878,237 bolivars (\$362,500); hides, 2,399,666 bolivars (\$463,136); and "papelón" (brown sugar), 1,387,298 bolivars (\$267,749).

The total amount of foreign merchandise coming to Maracaibo by coast traffic from La Guaira and Puerto Cabello is valued ordinarily at \$750,000 to \$1,000,000. Among the chief domestic products shipped into Maracaibo in 1919 were cigarettes and cigars, amounting to 2,523,129 bolivars (\$486,964).

Export coastwise traffic of Maracaibo in 1919 was valued at 47,786,361 bolivars (\$9,222,768). The principal items in the outgoing traffic with the various districts of western Venezuela in 1919 were: Imported textile goods, 2,519,956 bolivars (\$486,352); hardware, 5,720,956 bolivars (\$1,104,145); general merchandise, other than textiles, 7,656,583 bolivars (\$1,477,721); coined money, 4,653,434 bolivars (\$898,113); cigars and cigarettes, 560,915 bolivars (\$108,257); alcoholic drinks, 831,818 bolivars (\$160,541); wheat flour, 237,837 bolivars (\$45,903); machinery, 543,338 bolivars (\$104,864). The principal item of export to eastern domestic ports consisted of coffee, amounting to 4,072,738 kilos (1 kilo=2.2046 pounds), valued at 7,249,579 bolivars (\$1,399,169).

The trade of Maracaibo with foreign countries is discussed further along in this chapter (see p. 227).

CUCUTA, COLOMBIA, AND ITS TRADE WITH MARACAIBO.

Cucuta, in Colombia, is one of the oldest of the interior cities of this region and was the capital of the united Colombia and Venezuela from the time of the independence in 1821 until 1830, when Venezuela separated from the union and became an independent re-

public. Cucuta is beautifully situated in a broad valley, surrounded by mountains on all sides. The present population is 24,000, not including the small neighboring towns of Rosario, Salazar, San Luis, and Santiago, situated in the immediate vicinity. The valley of Cucuta is only about 900 feet above sea level, and the place is much warmer in climate than San Cristobal in Venezuela. The city was entirely destroyed by an earthquake May 18, 1875, and the new town looks more modern, with broad paved streets, lined with trees. Its public buildings have no equal in the entire district.

Cucuta is only a few miles from the international boundary line with Venezuela and has a railway, the Ferrocarril de la Frontera, which is owned by the city and leased to the Cucuta Railway Co., and which runs from Cucuta to the station of Frontera, in Colombia, opposite the Venezuelan town of San Antonio. The passenger traffic with Venezuela is largely over this road, generally with changes at the town of Escobal, opposite the Venezuelan town of Urena, from which place there is an automobile road to La Uruca (Estacion Tachira), on the Tachira Railway, and to San Cristobal. There is also a mountain pack trail leading from La Uruca (at the end of the Tachira Railway) and San Antonio to San Cristobal and Rubio. Nearly all of the foreign freight traffic, except that with the State of Tachira, passes down the Cucuta Railway to Puerto Villamizar, on the River Zulia, whence it is handled by river steamers, which transfer it to the Lake Maracaibo boats at the river port of Encontrados on the Catatumbo River.

The Cucuta Railway is 72 kilometers (1 kilometer=0.62 mile) in length, the gauge being 1 meter (3.28 feet). In this length is included the 10 miles of line owned by the city, extending to the Venezuelan border. The road was completed in 1888 to Puerto Villamizar, a distance of approximately 35 miles, and, in spite of the competition of the Tachira Railway in Venezuela, had been able to reduce its bonded indebtedness from 600,000 to 286,300 Colombian dollars (1 Colombian dollar=\$0.9733) by 1911. Traffic in 1905 amounted to a total of 13,500 metric tons (1 metric ton=2,205 pounds) and in 1911 to 20,722 tons. In 1917 the line handled 21,150 metric tons of freight, the total income being 221,564 Colombian dollars, and the expenses 77.87 per cent of this amount. The municipality of Cucuta owns the branch or extension to the Venezuelan border at Frontera which it has leased to the Cucuta Railway Co. for one-third of the net revenue.

The area of the region covered by the Colombian Department, or State, of Santander del Norte is 6,708 square miles, with a population of about 250,000 people. Its commerce has been controlled to a very great extent by resident German firms affiliated with German houses of Maracaibo, though there are a few fairly large Colombian firms which also import through Maracaibo, the route over the Colombian Andes to the Magdalena River being too difficult and costly.

The valleys composing the district produce tropical fruits, vegetables, cane sugar, and beef cattle for the local market and for some exportation to the Venezuelan State of Tachira.

The mountain slopes around Cucuta are covered with coffee plantations, and at elevations around 5,000 feet wheat and Indian corn

are grown. Cucuta coffee is one of the best grades grown in America and constitutes 90 per cent of the value of the total exports of the region, the average crop shipped via Cucuta to Maracaibo for export being around 150,000 bags of 60 kilos (1 kilo = 2.2046 pounds), or a total of 19,836,000 pounds. In 1913, 197,691 bags were exported. Hides of cattle form the next largest item of export. The imports into Cucuta consist of cotton cloth, machinery, wire, and a long list of general articles, of which medicines and hardware form the principal items. The value of the imports and exports, together with the number of bags of coffee shipped, are shown in the following table:

Years.	Total value of—		Bags of coffee exported.
	Imports.	Exports.	
	<i>Colombian dollars.</i>	<i>Colombian dollars.</i>	
1912.....	772,200	2,803,040	178,465
1913.....	770,906	2,349,106	197,691
1914.....	729,597	1,394,379	129,964
1915.....	426,722	1,498,416	186,543
1916.....	689,410	1,663,898	158,619
1917.....	546,573	1,171,591	107,043
1918.....	210,819	842,065	92,768

A large amount of the foreign trade of Cucuta, both export and import, is carried on directly with the United States and Europe, Maracaibo merchants serving only as forwarding agents. A number of American and European houses send traveling salesmen to Cucuta, via Maracaibo.

AGRICULTURE IN MARACAIBO DISTRICT.

It has already been stated that the Maracaibo district is the principal coffee-producing region of Venezuela. It is also the chief sugar-producing region, most of this product being exported.

AREAS OF CULTIVATION.

Starting with the immediate region of the port of Maracaibo, one finds permanent areas of cultivation along the lake shore, both north and south of the city—north as far as the town of San Rafael de Mojan and south as far as Concepcion. Across the lake, in and around both Altigracia and Santa Rita, there are also areas devoted to corn, cotton, tobacco, some sugar cane, and occasional plantations of coconuts. To the northwest of Maracaibo, in the region of Lake Sinamaica, the Indians plant corn, principally; and there is another inland region cultivated at times to seasonal crops in the region of Puerto Tatus. In and around the town of Perija, in the district of Libertad, there is also a considerable area planted to corn, beans, and some cotton, in season.

Along the eastern shore of the lake, far south of Santa Rita, and extending intermittently as far south as La Ceiba, there are patches of cultivated land—corn, beans, bananas, coconuts, and cotton being grown, with occasional small cacao plantations a little higher up in the valleys of the many streams flowing into the lake.

In the Trujillo region there are three main districts of permanent cultivation in coffee—that of Carache, to the north; that of Valera, to the southwest; and that of Escuque, still farther to the west.

In the immediate region of the lake, extending from Gibraltar through Bobures and Palmarito to Santa Maria, is the sugar district. Sugar has developed during the last few years into a large industry.

Farther to the west, but inland from the lake, there is cultivation in the vicinity of the towns of San Carlos, Garcitas, and Santa Cruz; and there is some slight cultivation of corn, principally in and around the river port of Encontrados, on the Catatumbo River, still farther west.

Merida, lying between two mountain areas of great height, has permanent areas in coffee, extending from Mucuchies on the north to Acequias on the south. On the western side of the range, farther to the south, the towns of Tovar, Bailadores, and La Grita have permanent areas in coffee. The next important district is that of San Cristobal, which includes the districts of Colon, Lobatera, Tariba, Rubio, and San Antonio. The coffee district of San Cristobal extends as far south as the Uribante River at Rio Frio.

With a total population of only 621,828, scattered over an area of 95,300 square kilometers (1 square kilometer = 0.386 square mile), it can not be expected that agricultural production will be greatly increased in the years to come, unless foreign immigration can be attracted to this district in large numbers. As elsewhere in Venezuela, the population is not increasing at a perceptible rate, and the great difficulty continues to be the lack of labor for field work.

COFFEE.

GRADES AND PRICES.

As has been said, coffee is the great staple of the entire region, except along the shore of the lake and in the lowlands of the interior. All the coffee received at Maracaibo for export comes from the three Andean States of Trujillo, Merida, and Tachira and the Cucuta region in Colombia. The annual average amount is 500,000 bags, of which the Cucuta district accounts for not less than 150,000 bags. The grades of coffee produced in this district are aromatic and are used for blending with cheaper grades of Brazilian coffees, always commanding a much higher price. The product is known generally as "Maracaibo" coffee, but at Maracaibo it is distinguished by the name of the locality from which it comes, the name designating the relative quality. Thus Merida coffee is the best, Tachira and Cucuta come next in grade, and last Trujillo, there being a small difference in the domestic price of the several grades. The nominal prices of the various grades in August and December, 1918, at Maracaibo were as follows (in dollars per quintal of 101.4 English pounds):

Grades.	August, 1918.	December, 1918.	Grades.	August, 1918.	December, 1918.
Trujillo.....	\$7.33	\$13.51	Tovar.....	\$7.72	\$14.47
Becono.....	7.72	13.90	Pregonero (Tachira).....	7.91	14.47
Tonondoy.....	7.53	13.90	Tachira.....	8.11	14.67
Merida.....	8.20	14.86	Cucuta.....	8.11	14.67

New York makes the following differences in the coffees from this district:

(1) "Fair Trujillos" means coffee from the State of Trujillo, not including the Bocono region.

(2) "Fair Cucutas" include the Cucuta, Tachira, Pregonero, Merida, and Bocono "trillados" (shelled coffee, cleaned and ready for export). Coffee from the Tovar district is from $\frac{1}{4}$ to $\frac{1}{2}$ cent per pound cheaper.

(3) "Good Cucutas" means a somewhat higher grade—better beans, cleaner, and with more care taken in hand selection, besides being always old-crop coffee from the preceding harvest season. The finer grades from all the regions, including Merida, may be classed under "Good Cucutas, trillados."

(4) The fine-washed coffees from Merida, Tachira, and Cucuta are in a class by themselves and are generally from 1 to 2 cents per pound higher in price in New York.

By the middle of 1919 the market price for Venezuelan coffees had increased by leaps and bounds to a high average of 26 cents per pound in New York for the higher grades, and in some cases a price of 28 cents was obtained for large consignments of selected coffee. Exports had been restricted after the entrance of the United States into the war, and growers and coffee buyers had been forced to store large quantities in Cucuta and Maracaibo. Needless to say, a large profit was realized on all stocks so held.

Prices per pound for "Maracaibo" grades in New York from stocks on November 30, 1920, were as follows:

	Cents.
Trujillo	9 $\frac{1}{2}$ –10
Bocono	10 $\frac{3}{4}$ –10 $\frac{1}{2}$
Tovar	10 $\frac{1}{4}$ –10 $\frac{1}{2}$
Merida:	
Trillado	11 $\frac{1}{2}$ –11 $\frac{3}{4}$
Washed	11 $\frac{1}{4}$ –13 $\frac{1}{4}$
Cucuta:	
Washed	11 $\frac{1}{4}$ –13 $\frac{1}{4}$
Ordinary	10 $\frac{3}{4}$ –10 $\frac{1}{2}$
Regular	10 $\frac{1}{4}$ –11 $\frac{1}{2}$
Good	11 $\frac{1}{4}$ –11 $\frac{3}{4}$
Select	13 $\frac{1}{4}$ –14 $\frac{1}{4}$

DISTRIBUTION OF PRODUCTION.

The coffee of the regions described is produced on large as well as small plantations. Many small plantations producing less than 100 bags annually are to be found in all regions of the district in which the plant is grown, but are especially numerous in the State of Trujillo, where property is more divided. The larger plantations are provided with the most modern hulling and cleaning machinery. The greatest percentage of large plantations is in the State of Tachira, the largest being the famous Bramon estate near Rubio, owned by an American corporation. The small producers usually have no hulling machinery and sell their crop in the berry to the neighboring hacienda owners, who hull and clean the coffee and sell it either to the local merchants or to the Maracaibo exporters or, through them, to dealers in New York.

The coffee industry has suffered in the past from the effect of low prices, but no other product has been found to take its place. The plant will grow on the hill and mountain sides where nothing else of comparable value could be cultivated with the same small amount

of labor, attention, and expense. There has been a steady increase in the total production since 1910, and new planting was encouraged by the high prices and prosperous condition in 1918 and 1919. The active construction of cart roads through the mountainous regions of the district, affording better means of transportation to rail and shipping points on the rivers or lake will still further stimulate this production and the demand for cleaning machinery.

The approximate average amounts of coffee production in the larger regions may be stated as follows:

State of Trujillo.—100,000 to 120,000 bags per annum—weight, 46 kilos (1 kilo=2.2046 pounds) per bag—divided as follows: Bocono, Carache, and Santana, 40,000 to 50,000 sacks; Trujillo, Valera, Mendosa, Escoque, Betijoque, La Quebrada, Monte Carmelo, and Chejande, 60,000 to 70,000 sacks.

State of Merida.—120,000 to 140,000 bags per annum—weight, 46 kilos per bag—of which Merida and Egido are credited with 40,000 to 50,000 bags; Tovar and Santa Cruz, 60,000 to 70,000 bags; and Torondoy, 20,000 to 25,000.

State of Tachira.—130,000 to 160,000 bags—weighing 58 kilos each—San Cristobal, Colon, Tariba, and Independencia being credited with 70,000 to 80,000 bags; Rubio, 50,000 to 70,000 bags; and Pregonero, 10,000 bags.

In the Department of Santander del Norte, Colombia, Cucuta is credited with 150,000 to 160,000 bags of 60 kilos each.

EXPORTS FROM MARACAIBO.

Of interest in this connection are the statistics of the movement of coffee at the port of Maracaibo by months during 1918 and the two preceding years, as follows:

Months.	Receipts from Interior.			Exports.		
	1916	1917	1918	1916	1917	1918
	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>
January.....	50,184	50,440	53,572	43,107	58,610	46,338
February.....	63,381	53,990	49,361	63,355	33,934	36,023
March.....	67,750	54,541	49,099	67,760	27,941	28,514
April.....	63,745	36,535	40,779	66,237	38,605	26,613
May.....	58,322	45,516	43,786	40,158	37,080	22,160
June.....	44,698	37,837	30,980	29,125	48,552	17,397
July.....	43,331	38,875	27,976	27,937	41,236	24,201
August.....	48,642	40,114	31,085	37,949	17,997	25,698
September.....	43,572	34,630	31,757	30,590	21,758	29,188
October.....	43,016	25,222	40,646	24,967	19,820	24,558
November.....	48,557	36,595	30,084	25,639	28,012	28,208
December.....	36,469	39,408	49,000	25,370	41,266	83,416
Total.....	611,667	494,103	477,435	482,244	414,811	392,314

The apparent discrepancy between receipts and exports is due, in part, to local consumption and to coastwise shipments, but mainly to the difference in the weight of the bags received and shipped. The coffee crop of 1918 was above the average yield in the States of Trujillo and Merida, and below the average in the State of Tachira and in the Cucuta region of Colombia. The picking season is from September to January, according to elevation of plantations and the season. A late rainy season in the summer months will bring the harvest along a month later in the fall of the year.

The following table shows, by months, the number of bags of coffee exported from the port of Maracaibo since July, 1919, according to figures supplied by the United States consulate. (Each bag contains 60 kilos of coffee; 1 kilo=2.2046 pounds.)

204 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

Month.	United States.	Curaçao.	Nether-lands.	France.	All other countries.	Total.
1919.	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>	<i>Bags.</i>
July.....	67,077	10	89		407	67,583
August.....	77,151	533		4,073	1,019	82,776
September.....	35,506	1,210	1,419		500	38,635
October.....	22,280	2,371	213		210	25,054
November.....	50,610	1,211	564		565	52,890
December.....	39,171	7,571			400	47,142
1920.						
January.....	35,624	7,358			895	43,877
February.....	36,575	4,271				40,846
March.....	37,282	2,022			96	39,400
April.....	33,134	3,270				36,404
May.....	52,550	2,436			315	55,301
June.....	44,933	3,533		2,103	212	51,101
July.....	20,046	5,470			2,711	28,227
August.....	13,197	7,092			715	21,004
September.....	13,972	5,938	200		1,050	21,160
October.....	9,046	4,110		1,000	601	14,827
November.....	22,531	4,237			280	27,048
December.....	16,423	621	316		228	17,588
1921.						
January.....	28,921	339			1,403	30,663
February.....	42,000	2,105	400	10	965	45,480
March.....	32,167	459		200	4,154	36,980
April.....	23,045	3,945	200		2,922	30,112
May.....	43,509	8,155	883	325	4,050	56,922

COFFEE PRODUCTION AND MARKET CONDITIONS, 1920-21.

The 1918 crop was above normal in total production and was moved at the extraordinarily high prices secured during the latter half of 1919; the shipments included part of previous crops held in storage awaiting better ocean transport facilities. The 1919 crop was also above normal in quantity, being estimated at 1,020,000 sacks for the entire country. A large portion of this crop was purchased by speculators who paid an average price of 120 bolivars (\$23.16) per quintal, in anticipation of a continued high market for coffee in the United States during 1920. They were caught with large stocks on hand during the last half of 1920 when the market suddenly declined, reaching prewar levels by the harvest time of the 1920 crop. Maracaibo alone was estimated to have in storage not less than 200,000 sacks of the previous crop that the owners would not sell at prevailing prices, preferring to hold the coffee for better market conditions.

The 1920 crop was reported to be 25 per cent less than normal throughout the entire Andean region on account of the late rains; and, more serious still, labor conditions were such that it was not expected that more than 50 per cent of the yield could be saved during the picking season.

It is not to be supposed that the increased cost of production (principally in the labor factor) brought about during recent years, combined with the present low prices, will cripple the industry in the Andean States of Venezuela or in the Cucuta region. The cost of living has decreased very considerably during the last half of 1920; staples such as sugar, corn, lard, etc., are no longer exported as was the case during the war years, and imported articles of first necessity, such as cheap cotton goods, have also declined in price very considerably. Coffee prices are about at the old prewar level, and under present conditions the plantations can continue to be cultivated at a profit, although there will no longer remain a large margin for the speculator.

CACAO.

In many places in the district cacao is grown at altitudes varying from sea level to an elevation of 2,000 feet. It is of better quality than cacao from other parts of Venezuela and commands a higher price in the foreign market. In the hot, damp valleys of the district about 200 trees are planted to the hectare (2.47 acres), the larger trees of the native forest being left to serve as shade for the tender cacao plants, which require from five to seven years to reach maturity and full bearing. The average life of the tree is approximately 40 years, during which time 550 to 675 kilos (1 kilo=2.2046 pounds) of cacao are produced per hectare. Two kinds of cacao are grown in the Maracaibo district—the “Criollo,” lower down and nearer the lake, and the “Chuaó Plantation,” which is of still finer grade, containing more oil. In the United States the cacao from this district is known by the trade name of “Maracaibo” cacao.

While cultivated more or less throughout the lowlands of the district where there is population, the centers of production are Encontrados and Valderrama (both on the Catatumbo River), the valley of the Garcitas River, the district of Perija (all these being lowlands), and the districts of Estanques, Santa Cruz, and Tovar, in the State of Merida, in the uplands.

The development of the cacao industry has made satisfactory progress in the district during the past 10 years, but coffee is usually preferred on account of the smaller amount of labor required in the preparation of the bean for export and the fact that coffee keeps better under the climatic conditions prevailing in the region and during shipment. The cacao bean will ferment if stored for any length of time in a hot, moist warehouse without attention to proper drying.

Estimates of the production of each region named are not available. The industry is not so important in this district as in other parts of Venezuela, but it is increasing slowly. Practically the entire crop is exported, the export figures affording an accurate index of the total production. More than 95 per cent of the cacao exported goes to the United States, though France was the principal customer for Venezuelan cacaos prior to 1914. In 1916 Maracaibo exported a total of 883,330 pounds, valued at \$120,344. In 1916 the exports were 640,926 pounds, valued at \$77,749. Only the beans are shipped, packed in bags weighing 110 pounds. Exports in 1917 amounted to 783,461 pounds, valued at \$167,441, nearly all of which went to the United States. The crop for 1917 was 25 per cent below normal, and from 25 to 30 per cent of the old crop remained unsold on account of war-time restrictions and lack of tonnage for ocean transportation.

In terms of bags, Maracaibo's exports amount to an annual average of 6,850 bags of 110 pounds each, the total export of the country being around 300,000 bags, of which La Guaira ships an average of 175,000 bags, Puerto Cabello 50,000 bags, and Carupano 75,000 bags.

During the year 1919 (the latest period for which statistics are available) Maracaibo shipped 383,927 kilos (1 kilo=2.2046 pounds) of cacao, valued at 861,882 bolivars (\$166,343), to the United States, the other countries of destination being: Curaçao, 21,604 kilos; Great Britain, 3,131 kilos; Netherlands, 12,866 kilos; Spain, 6,000 kilos.

SUGAR.

SURVEY OF DEVELOPMENT.

The sugar-cane industry has existed in a certain form for many years around Lake Maracaibo. Originally there were merely a number of small mills turning out the native brown sugar for domestic consumption; this is called "papelón" in Venezuela and Colombia and "panoche" in Mexico, the latter being the name under which it is known generally on the American market. It is also called "panela" in Colombia and Venezuela when put up in large round cakes. The usual form of the "papelón" is that of a brick, similar to maple-sugar cakes seen in the United States. This brown sugar is polarized at 70° to 75°. This sugar was made only for the local market and export to the Dutch West Indies (principally Curaçao) until 1916, when, owing to the high price and scarcity of sugar, \$15,435 worth was shipped to the United Kingdom and \$732 worth to the United States. The total amount of "papelón" exported from Maracaibo in 1916 was 3,325,783 pounds, valued at \$71,453, compared with 2,912,780 pounds, valued at \$49,735, in 1915.

One of these small mills (the factory of Buscan & Matos) made white sugar, but only for the local market. The manufacture of sugar for export to the United States had its inception in the lowering of the American duties under the tariff act of 1913, but factories were not completed for operation until the grinding season of the autumn of 1915. During the last months of 1915, \$57,804 worth of sugar was invoiced for export to the United States. Three sugar mills, equipped for making centrifugal sugar, were erected on the south and east shore of Lake Maracaibo, at Bobures and La Ceiba. In the fall of 1917 only one of these factories was being operated, the other two being in the course of reorganization.

It is said locally that a much larger quantity of cane per acre is produced in the Lake Maracaibo region than in Cuba or other cane countries, but that the sugar content of the cane is much less, the extraction being only 6 to 7 per cent of the weight of the cane, against 10 to 14 per cent in Cuba, Hawaii, and elsewhere. Another drawback to the sugar industry on Lake Maracaibo is the climate, which tends to discourage even native labor. The sugar exported from the factories to the United States generally polarizes around 97° and is intended for the refineries. The exports of sugar to the United States from Maracaibo in 1919, as declared at the American consulate, were 11,620,858 pounds, valued at \$614,819, while in 1920 the weight was only 2,803,659 pounds and the value \$302,762. In other recent years the quantity shipped to the United States was greater; in 1917 the amount was 24,811,581 pounds, valued at \$1,132,294.

Climatic conditions greatly affected the industry, as labor can be held on the plantations only with the greatest difficulty on account of the ravages of malaria.

SUGAR ESTATES AND THEIR PRODUCTION IN 1920.

The estate of the Venezuela Sugar Co. is at Bobures, and the general offices are at Maracaibo. The acreage in cane is 2,000 hectares

(1 hectare=2.47 acres), and the production is 11,500,000 kilos (1 kilo=2.2046 pounds). The mill, called the Central Venezuela, was purchased at second hand in Louisiana and has a grinding capacity of about 800 tons of cane every 24 hours. In 1917 the mill machinery was improved by the additional installation of crystallizers and triple effects, the first plant having only double effects. The first crop was milled in the season 1915-16. The stock of this company is registered in the United States, with a capital of \$4,000,000, the initial investment in the first plant being around \$1,500,000. In 1917 there were some 3,000 acres in cane, and this amount was gradually increased until, in 1920, it had reached a total of 4,942 acres. There is sufficient land available to double this acreage. The company has 15 kilometers (1 kilometer=0.62 mile) of railway and a small pier on the lake for loading purposes. The sugar is shipped principally in schooners to Willemstad, Curaçao, whence it is transshipped by steamer to New York. The plant is very near that of the Sucre Central.

In October, 1920, a stock dividend of 50 bolivars (\$9.65) per share was paid, covering the economic half year ended June 30, 1920. Total dividends were 750,000 bolivars (\$144.75) for the period. Stock was quoted on the Maracaibo market in October, 1920, at 1,200 bolivars (\$232) per share, the par value being \$100. The previous month, quotations of 1,400 bolivars (\$270) were made. On September 30, 1920, a meeting of stockholders was called to pass on the proposition of increasing the capital stock of this company—which had in the meantime been reorganized with native capital of 7,800,000 bolivars (\$1,505,400)—and to provide for the revaluation of the entire property. (Stock quotations in August reached the high figure of 1,500 bolivars, or \$289.) It is generally understood that this company is now controlled by Venezuelan capital.

The Central Azucarero del Zulia (Central Sucre) began operations by the purchase of the old El Banco plant, the largest of the old factories, near Bobures, on the southeastern shore of Lake Maracaibo. The capital is 6,500,000 bolivars (\$1,254,500), divided into shares of 400 bolivars (\$77) each. The machinery was purchased from Belgium through a Habana firm just before the outbreak of the war. The mill has a grinding capacity of 800 tons of cane in 24 hours, and manufacture was started in February, 1917. The two cane plantations of Sucre and El Banco have a total of 1,500 hectares, part of which is worked, under the Cuban system, by contractors (called "colonos"), who are allowed $5\frac{1}{2}$ pounds of sugar for every 100 pounds of cane delivered at the scales of the "central." In addition, the company has continued the operation of the old mill at El Banco, with a capacity of 150 hundredweight of crystallized sugar for domestic consumption. The capacity of the large plant is 1,840,000 kilos of crystallized sugar for the season, which begins in November and lasts until June in this section.

Cane grows well, but the juice rarely exceeds 8° Baumé. Irrigation is unnecessary; on the contrary, drainage work is done to reduce the excess water on the lands, which lie very low.

In August, 1920, the stock was quoted at 300 bolivars (\$58) per share on the Maracaibo market, with offers of 210 and 220 bolivars (\$40 and \$42).

The Central Azucarero de La Ceiba is a Venezuelan stock company with headquarters in Caracas; it is capitalized at 1,250,000 bolivars (\$241,250), divided into shares of 25 bolivars (\$4.82) each. The property is located near La Ceiba, the terminus of the La Ceiba Railway, in the State of Trujillo north of the properties of the other two large sugar companies. The plant is located 17 kilometers from the lake. The mill was purchased in Porto Rico after it had been used there for one grinding season, the capacity being 400 tons of cane in 24 hours. The Ferrocarril La Ceiba has a branch line to the plant and also transports the cane to the mill, for which service a charge of 7 cents per 100 pounds is made. New grinding machinery was under installation during 1920, and the capacity of this mill was being increased to 700 tons of cane per day of 24 hours. The first grinding season began in March, 1917, this first season yielding only 60,000 hundredweight of centrifugal sugar for export. The initial acreage in cane was about 2,000, and this has been increased to about 3,000 acres, which are expected to produce in 1921 a total of 4,000,000 kilos of centrifugal sugar for export. The company owns its 3,000 acres of sugar-cane lands, which can be easily irrigated from the waters of the navigable River Motatan. The lands are level and are covered with a layer of humus 5 feet in depth. Recently, an additional 3,000 acres adjoining the original property have been purchased for future expansion and some clearing has been done, but the development work has been handicapped by the traditional lack of sufficient labor supply. The average yield per acre is 60 tons of cane, from which juice running from 8° to 10° Baumé is extracted.

The Buscan & Matos property is being remodeled to make export sugar, with a proposed capacity of 1,150,000 kilos of centrifugal sugar.

Another new sugar company has been recently organized in Maracaibo with a capital of 2,000,000 bolivars (\$386,000), divided into shares having a nominal value of 500 bolivars each. The company is known as the Central Gran Vía. Stock was quoted in August in Maracaibo at 520 bolivars (\$100) per share, though the machinery had not yet arrived on the ground.

A condensed survey of the sugar industry in the Maracaibo region, not including the seven or eight small mills producing brown sugar, shows the following result for 1920:

The actual production of centrifugal sugar in the 1920-21 season was estimated at 14,490,000 kilos, produced from approximately 13,125 acres of cane. The increased production from the Central La Ceiba and Central Sucre, by reason of new machinery installations and additional areas planted to cane and from several smaller haciendas now remodeling old brown-sugar plants, would reach 10,000,000 kilos by the end of 1922, at the present rate of investment and improvement. Therefore the possible export of centrifugal sugar from Maracaibo may be estimated at nearly 25,000,000 kilos within the next two years. The estimated present production for the entire country is 26,515,000 kilos, and the estimated increase in production is 15,000,000 kilos, while the domestic consumption of white sugar is only 6,000,000 kilos, because the "papelón" of the country is more generally used by the majority of the population as a staple article of food in their daily diet.

EFFECT OF HIGH AND LOW PRICES.

The exportation of refined sugar and of the brown sugar of the country was stimulated by the high prices obtained during the war years. The 1920-21 season was expected to yield about \$4,000,000 worth of sugar for export to the United States, principally from Maracaibo. The sudden decline of the price of sugar in the fall of 1920 to pre-war price levels of about 4½ cents per pound in New York, f. o. b. refinery, made it very doubtful whether Maracaibo could continue to export sugar to the United States in competition with Cuba and Porto Rico, considering the higher cost of production caused by labor and climatic conditions, local and ocean transportation costs, etc.

By the end of November, 1920, the market quotations of all sugar stocks in Maracaibo had declined very considerably—those of the Venezuela Sugar Co. being quoted at 800 bolivars (\$154), those of the Central Zulia at 85 to 90 bolivars (\$16 to \$17), and those of the Central Ceiba at 2 to 3 bolivars (\$0.39 to \$0.58), with the bonds at 60 per cent of par value.

It remains to be seen whether the domestic market is capable of absorbing a larger amount of refined sugar in competition with the locally produced "papelón," for which there are a great number of small mills all over the country, and whether the large modern mills can continue to operate at a profit under present and future price conditions in the export market.

CORN.

Indian corn is found everywhere in the district and practically at all altitudes, but the principal section of production is in the lowlands south of Lake Maracaibo in the regions of Garcitas and San Carlos. Corn was exported from this district for the first time in 1917, shipments to the United States beginning in August and continuing until April, 1918, when the United States prohibited further importations. The value of the quantity exported during this period was \$271,887. The industry could be developed to much greater proportions provided a steady market could be found for the excess over local consumption.

The islands of the Dutch West Indies have been steady customers for the excess food products of the Maracaibo region. Curaçao has taken annually an average of 1,200 tons of corn, valued at about 600,000 bolivars (\$115,000); the exports to Curaçao during the year 1919 amounted to 1,471,505 kilos, valued at 398,252 bolivars (\$76,863). Other shipments of corn—to Aruba, Bonaire, Trinidad (British West Indies), and Porto Rico—during this same year were 1,176,198 kilos, valued at 302,080 bolivars (\$58,301), of which Trinidad took the largest amount—332,000 kilos, valued at 78,880 bolivars (\$15,224). The total annual excess production of corn for the entire district, available for exportation, may be estimated at 5,650,000 pounds, valued at approximately \$30,000.

Methods of cultivation are crude and very simple. The undergrowth and trees are cleared away with machetes and axes, and then, after the land is burned off during the dry season, the corn is planted in wide rows at the beginning of the rainy season without

plowing or other cultivation other than keeping the larger weeds down with the inevitable machete.

WHEAT.

Wheat is grown on the uplands at 5,000 to 10,000 feet elevation. The largest producing areas are in the eastern part of the State of Merida and the southern part of Trujillo, with Timotes and Mucuchies as producing centers. However, wheat fields and small flour mills are to be found in nearly all the upland country and the commercial centers in the three Andean States. Up to the end of 1917, when it became impossible to receive shipments of flour from the United States, Maracaibo resorted to the interior for its local supply of wheat and flour and even secured some for shipment to Caracas. The grain is of good quality, but the flour is dark in color from the lack of proper modern milling machinery. There are few roller mills, and there ought to be a limited market in the district for the sale of such mills of small capacity, as well as small units of thrashing machinery.

POTATOES.

Potatoes are grown in considerable quantities in the uplands of the interior to altitudes of 10,000 feet above sea level. The principal center of production is Timotes, in the State of Trujillo. Potatoes are shipped from the interior to Maracaibo, and small quantities are exported to other parts of Venezuela and to Curaçao.

FRUITS.

Tropical fruits (oranges, lemons, plantains, bananas, pawpaws, alligator pears, etc.) and vegetables of all kinds are grown in abundance for local consumption throughout the district. Pineapples of a very superior quality and flavor are grown in the interior. The mountain districts of Merida, La Grita, and Rubio even produce peaches and apples of a fair quality. However, the only fruits exported are plantains and bananas—and those in limited quantities, mainly to Curaçao.

COCONUTS.

Coconuts are grown in considerable quantities all along the shores of Lake Maracaibo. The oil is extracted for the local soap factories, the shells being used for fuel. Small quantities of the raw nuts and of the oil are exported. The chief producing center is the town of Santa Rita, almost directly opposite Maracaibo.

RICE.

Rice is also grown on the lowlands surrounding Lake Maracaibo, but not yet in sufficient quantities to supply the local markets; 2,653,285 pounds, valued at \$111,726, were imported from the United States in 1916, as compared with 1,980,117 pounds, valued at \$82,164, in 1915; by 1919, however, the value of such imports from the United States had decreased to \$33,920.

HAT FIBER.

The fiber of the "soate" palm, locally called "cogollo," is exported principally to Curaçao for the hat-making industry there. This fiber is very similar to the famous Panama hat fiber of Colom-

bia and Ecuador. The State of Zulia produces the greatest amount for export. In 1919, 264,974 kilos (1 kilo= 2.2046 pounds) were exported, valued at 170,651 bolivars (\$32,936).

COTTON.

Cotton grows well in nearly all the warm regions of Venezuela and especially well on the lowlands of the Maracaibo Basin. In 1916 cotton growing received considerable attention in this district, including the mountain State of Tachira, where an excellent grade of strong white cotton was produced, giving 30 per cent of clean fiber. The yield near the city of Maracaibo was estimated that year at 40,000 quintals (1 quintal=100 pounds), the first planting having been made five years previously. That same year the Caribbean State of Falcon took measures to assist in the production of cotton along the coast; seed was distributed and every inducement made by the Government to increase the production of cotton for the domestic mills of the country.

In 1918 the States of Zulia, Trujillo, and Merida produced between 2,500 and 3,000 bales of 500 pounds each, principally near Maracaibo, where, on account of climatic and labor conditions, it is impossible to increase production to any extent. In the city of Maracaibo there are three small gins, namely, "La Mota," of Cosino Hermanos; "La Paulina," of Angel Ma. Quintero; and "La San Antonio," of Julio A. Añez y Cía.

The State of Zulia produces about 18 per cent of the cotton grown in the entire country. Its production in 1919 was estimated at 359,100 kilos (1 kilo=2.2046 pounds).

"La Hispano-Venezolana," a small knitting mill turning out a cheap grade of knit cotton undershirts much used by the people of the lower classes, is now in liquidation in Maracaibo. There are no other cotton-manufacturing plants there, with the exception of a few small hand-loom plants making cheap blankets, etc.

Exports of cotton from Maracaibo go chiefly to Curaçao, such shipments amounting, during the year 1919, to 153,267 kilos, valued at 305,399 bolivars (\$58,942).

During the period of high prices in 1918 and 1919, Maracaibo cotton was shipped coastwise to Caracas, via the port of La Guaira; but with prices now down to 6 to 8 bolivars (\$1.16 to \$1.54) an "arroba" (of 25 pounds) for cleaned cotton in Valencia, which is the chief producing region of the country, it is not thought that large crops in the Maracaibo region could be disposed of at an advantage unless labor conditions were better and the plants were cultivated on a much larger scale.

Corn is planted between the rows of cotton, which is reseeded every two years with Mississippi seed. The corn yield from the ground seeded to cotton just about pays the expenses of the crop, sometimes including picking and marketing. The chief difficulties are the climatic conditions and the universal lack of laborers in sufficient numbers.

HIDES AND SKINS.

Cattle are raised in considerable numbers around Lake Maracaibo, but not in sufficient numbers to justify the erection of a packing

house for the export market, as at Puerto Cabello. There are no exports of live cattle or beef from the district, but cattle hides and goatskins form the most important item of exportation after coffee and sugar. According to official Venezuelan statistics, the exports from Maracaibo were as follows during two recent years: Hides—1918, 1,795 metric tons (of 2,205 pounds), valued at 3,249,060 bolivars (\$627,069); 1919, 575 metric tons, valued at 1,862,119 bolivars (\$359,389). Skins—1918, 507 metric tons, valued at 1,369,546 bolivars (\$264,322); 1919, 186 metric tons, valued at 875,465 bolivars (\$168,965). The declared exports to the United States during three recent years have been as follows: Hides—1918, 560,870 pounds, valued at \$183,468; 1919, 1,448,937 pounds, valued at \$647,159; 1920, 777,634 pounds, valued at \$263,403. Goatskins—1918, 38,678 pounds, valued at \$18,172; 1919, 385,200 pounds, valued at \$308,264; 1920, 271,867 pounds, valued at \$167,148. The amount of calfskins exported is negligible. Deerskins exported to the United States, which takes practically the entire production, amounted to \$5,254 in 1919 and \$2,184 in 1920. A small amount of wool is brought down from the mountainous part of the district and exported to the United States, the amount never having exceeded a value of \$15,500 (the figure for 1919).

FOREST PRODUCTS.

Timber is found in all parts of this district, but on account of the prevailing lack of means of transportation the only wood that can be exported is that which grows on the lowlands in the immediate vicinity of the lake or near the banks of the navigable streams. "Vera," or bastard *lignum-vitæ*, can be secured in abundance for export in 30-foot lengths, 25 to 30 inches in diameter. It is extremely hard and heavy and is especially valuable for shipbuilding fittings, though not as hard as the real species of *lignum-vitæ*. "Canlete" (paddlewood) is not available in such large quantities as "vera." It is softer than "vera" and is affected by the sun and by humidity. "Curarire," almost equal to "vera," is not found in sufficient quantities to permit of its exportation in any appreciable amounts.

Among the softwoods, boswood, or "zapatero," is found in abundance and has been exported to the United States and to Europe. It is generally shipped in lengths of 6 to 10 feet, in diameters of 6 to 12 and even 14 inches. "Carreto" is also to be had in lengths of 20 and 30 feet and thicknesses of 25 to 30 inches.

Of the colored woods, ebony and fustic (logwood) are to be had in quantities sufficient for export.

Lumbering is carried on in a very primitive manner. The only sawmills are located at Maracaibo, where there are four. Trees are scattered, the cutting is not done systematically, and there is much waste of labor in hauling the logs down to the lake or river for transportation. It has been thought that the erection of small mills on the lake or rivers near the timbered areas, where the logs could be made up into timber for direct exportation in schooners, would make the industry more profitable.

Maracaibo, however, is the lumber center of Venezuela. Most of the woods leaving the port are in the form of logs, hewn in the woods

by hand, though planks and boards are produced by the local saw-mills and exported also. The cost of hewing and dragging the heavy timbers to the river bank far in the interior, through tropical forest and jungle, is largely responsible for the high cost of production, and this cost is increasing as the available supply of merchantable timber becomes more remote from the banks of the streams. "Caoba"—mahogany—is worth \$120 per 1,000 feet in Maracaibo; cedar, \$65 per 1,000; and "vera," \$100 per 1,000. Prices in Caracas for these same woods are, on an average, almost double.

Other forest products consist of divi-divi, copaiba balsam, "Guiana" bark, "Maracaibo" bark, "Simarauba" bark, and orchids. Only the first two items are important.

Exports of divi-divi to the United States in 1919 were 4,870,539 pounds, valued at \$175,407, but they fell off to 3,521,565 pounds, valued at \$89,246, in 1920. With the exception of amounts shipped to Curaçao—all for ultimate transshipment to the United States, the above figures represent the total quantities collected in the entire district:

Exports of balsam of copaiba in 1919 to the United States were 28,122 pounds, valued at \$14,186. This amount increased in 1920 to 50,154 pounds, valued at \$32,181.

Coconut oil to the value of \$7,496 was exported to the United States in 1917.

MINING.

It is said that minerals abound in every one of the Andean States. Coal of the best quality found in Venezuela is known to exist less than 40 miles from the city of Merida. There is also a salt mine near Merida and a soda deposit near Lagunillas, a town about 20 miles from Merida, with which it is now connected by the new cart road. There are said to be deposits of copper, zinc, lead, iron, and coal in different localities in the ranges of the Venezuelan Andes in the Maracaibo district. Copper, lead, and silver mines were worked by the Spaniards in colonial times in certain regions, but, judged from such scant history as exists, the work was always on a very small scale and limited by transportation difficulties. As yet the only mineral resources developed have been the coal and petroleum deposits of the State of Zulia.

For an account of petroleum in the Maracaibo district the reader is referred to the general discussion of petroleum in Venezuela, beginning on page 92.

ASPHALT RESOURCES.

The asphalt resources of the Maracaibo region are not so important as was believed only a few years ago. In fact they have become insignificant in comparison with the petroleum and coal resources which are expected to yield many millions of dollars in the near future. Asphalt seepages (such as the one at Mene Grande) that were believed to be of immense value are found to be actually of small importance. The largest deposits of asphalt appear to exist in the region of Carrasquero, near the River Limon, northwest of Maracaibo. These deposits are leased by the Zulia Asphalt Co., a subsidiary of the Caribbean Coal Co., and it is planned to exploit them together with the coal fields which this latter company will open up

in the same region by means of the new railway projected from Carrasquero on the River Limon to the port of Castilletes Bay on the Goajira Peninsula. (See below.)

COAL MINING.

Deposits of coal are found in several places in the Maracaibo district, around the lake and in the mountainous regions of the Andes. There are known beds near Rubio in the State of Tachira, and coal is known to exist in all three of the Andean States.

DEPOSITS ON ISLAND OF TOAS.

Coal beds are found on Toas Island, lying just off the extreme western end of the channel of Lake Maracaibo, opposite the town of San Rafael de Mojan. These are the oldest known coal beds in this section of Venezuela, having been used by Government vessels as far back as 1850, when the French war vessel *Mogador* made an examination of the coal deposits of the Caribbean Sea, paying special attention to those of Coro and of Toas Island. The outcroppings occur on the north side of the island at the lake shore and run to the west through a lime formation of such porous character that it is easily penetrated by the salt water, making all workings, except those of purely surface character, impossible. Also, the coal is said to contain such a high percentage of sulphur as to unfit it for continued use under boilers. German merchants of Maracaibo had experts examine these coal beds many years ago, and their working was pronounced impossible, from a commercial standpoint, at that time. They have not been exploited in modern times, and all lake boats on Lake Maracaibo now burn the more easily obtained fuel oil produced by the local wells of the Caribbean Petroleum Co.

DEPOSITS OF RIVER LIMON DISTRICT.

Thirty years ago a small railway was built by the Zulia Asphalt Co. from the town of Carrasquero, on the River Limon, southwest to the asphalt lake of Tule. This line has been leased by the Caribbean Coal Co., an American company, with its stock quoted on the Maracaibo market, and, as the waters of the Limon empty into the too shallow Lake Maracaibo, a concession has been secured for the continuation of the railway from Carrasquero to Punta Castilletes on the deep waters of the Gulf of Venezuela, where there is a good harbor. This project involves approximately 90 miles of new construction, the mines being 125 miles distant.

The coal found in the River Limon region is said to be almost, if not quite, equal to "Pocahontas" coal, and it is believed that 500,000 tons per annum can be delivered at seaboard when the railway to Castilletes is completed. The Maracaibo Coal Co., another subsidiary of the Caribbean Coal Co., will mine the coal.

The concession for the new railway was approved by the Venezuelan Congress in 1917. The authorized specifications of the road were: Gauge, 1.435 meters (standard American gauge); rails, 29.76 kilos (1 kilo=2.2046 pounds) per meter (1 meter=3.28 feet), minimum allowed; maximum grade, 3 per cent; minimum radius

of curves, 100 meters. The passenger tariff was to be fixed at 0.25 bolivar (4.82 cents) per kilometer, or about 4 cents per mile. Freight rates were fixed at 0.60 bolivar per metric ton (1 metric ton=2,205 pounds) per kilometer, equal to 7.24 cents per ton-mile.

Exemption from all import duties on machinery, equipment, and supplies used in the construction of the line was granted for the period of 25 years, with permission for the erection of all shops, warehouses, stations, telegraph and telephone lines, etc., necessary for the operation of the railway. Vessels engaged in the import and export trade for the company are not obliged to clear at other customhouses. The company was authorized to construct wharves, piers, docks, etc., at Castilletes Bay and in the River Limon, to undertake the work of improving existing port facilities, to build a new customhouse at Castilletes for the use of the Government, and also to provide a sufficient water-supply system for the new port.

All machinery, agricultural implements, etc., used for the development of the country were to be transported at 50 per cent of the regular tariff rates. Mail was to be carried by the railway free of charge for the Government; Government employees were to travel at half rates, and troops and their equipment, munitions, etc., at one-third of the regular rate (in time of war, at one-sixth of the usual rate).

Other clauses of the contract provided for freedom from all special taxes that might constitute a direct burden on the company, but all ordinary existing taxes were to be paid. The company has the right to erect and establish electric lighting plants and other public works, with an exclusive concession for 10 years. The contract, or concession, was made transferable with the consent of the Government.

The time allowed for dredging and port work at Castilletes and the deepening of the river port and channel of the River Limon was stated at 10 years from the date of contract. All plans of construction must meet with the approval of the Minister of Public Works.

The payments to the Government were placed at 2,500 bolivars (\$482) per month for 10 years from the date of the first shipment of coal from Castilletes, and 500 bolivars (\$96) per month thereafter for the remainder of the concession.

The district is thinly populated and the success of the scheme depends on the value and extent of the coal deposits and the ability of the company to mine this coal successfully and transport it to tidewater for rapid marketing. The plans of the railway call for a daily one-way operating capacity of 10,000 tons of coal. The main line from Carrasquero to Castilletes is to be 93 miles long, and the branches have an additional 35 miles, including the old line leased by the company from the river to the asphalt lake of Tule.

In August, 1920, the capital of the Caribbean Coal Co. was given in Maracaibo as \$2,000,000, divided into shares of \$1 each and quoted on the local stock market at \$6 to \$8 per share, there being considerable local speculation in this stock. The stock is not quoted in Caracas.

The first authentic discovery of the coal deposits of this region, which lie in the districts of Mara and Maracaibo, of the State of Zulia—south of the district of Paez, through which the railway will

run to reach Castilletes—was in the years between 1830 and 1834, when raiding Goajira Indians were pursued by ranchers of San Rafael de Mojan to recover stolen stock driven off by the Indians toward the Perija Range, which divides Venezuela from Colombia. This range sends off shoots in the shape of ranges of low hills which run northeast by southwest and form the valleys of the Rivers Guasare, Socuy, and Tule, all of which are tributaries of the Limon, the Tule flowing into the swamp of the same name south of the Socuy, where the asphalt lake mentioned is located, the asphalt being the objective of the old railway from the town of Carrasquero, situated on the Limon to the northeast.

On their way back from an unsuccessful pursuit of the Indians as far as the high range of Perija the ranchers encountered a phenomenon that filled them with terror. In the bottom of a deep ravine they saw a cave out of which came flame and smoke. The expedition ended there, and nothing was done in the way of investigation until 15 years later, when, during the earthquake of May, 1849, the people of Mojan saw fire lighting the sky at night in this direction, and during the day large clouds of smoke. The country to be traversed between the coast of the lake and this region is very difficult—covered with tropical forest, cut by many small and large ravines and washouts, and very unhealthful. The reputation of the Goajiras also had its effect in deterring further exploration at that time. It was not until the year 1876 that the Venezuelan engineer, Briceño Méndez, interested the Government of the State of Zulia to the extent of equipping an expedition to explore the region.

From Maracaibo the land is fairly level as far as the region lying just south of the Tule swamp, about 80 miles due west of the capital. An asphalt seepage, or lake, exists 30 miles east of Iragorri, on the road to Maracaibo, and is said to cover an extent of 6,000 square meters (1 square meter=10.76 square feet). Asphalt is also found in many places along the Tule River farther west. The first outcroppings of coal were found by Méndez just after crossing the Tule River near Guasdual, south of the Tule Lake. Explorations uncovered 14 veins of coal along the Tule, all running apparently from north-northeast to south-southwest, and their depth and width could be judged at the points where they crossed the river bed. The course of the river was found lined with coal for a distance of 10 kilometers (1 kilometer=0.62 mile), and also the course of the Riecito River, an affluent of the Tule on the northern side, being followed for 12 kilometers in plain sight. Coal was found in the form of heavy outcroppings extending over an area estimated as being not less than 300 square miles and reaching as far to the north as the Socuy River.

Méndez found three veins of coal on fire—one near Guasdual, another 6 miles farther south on the Tule, and another farther to the northwest. The last-named is the largest and is thought to be the site of the original discovery of the so-called volcano by the early ranchers who pursued the Goajiras.

Méndez characterized this coal as being superior to the Coro grades and very like the well-known English "cannel coal" in structure, but less dense and not so heavily charged with bitumen. He was convinced from his knowledge of the formation that still greater

deposits of coal would be discovered farther northwest along the Socuy River, which is the region where the chief deposits are known to exist to-day and where the new mines have been opened.

Deposits of coal also are known to exist between the Rivers Negro and Santa Ana, south of the town of Machiques. During recent years the entire territory has been explored for petroleum signs on both the east and the west sides of the lake and as far inland as the headwaters of the Catatumbo River and the mountain range dividing Venezuela and Colombia.

PROPOSED COAL PORT OF CASTILLETES.

The distance to Colon by sea from the proposed coal port of Castilletes is only 595 miles by sea. There is at present a depth of 16 feet in the roadstead, which the company plans to deepen to 35 feet for ocean tonnage. The construction of the proposed railway and port and the opening of these coal deposits on a large scale would constitute the largest industrial development contemplated in Venezuela for some time. Coaling facilities would affect the prosperity of Curaçao adversely and would also bring about changes in the trade of Maracaibo if the line were to be extended from the coal fields east to Maracaibo over the easy route presented by the level topography of the country to the lake. The freight rates provided for in the contract with the Government are the lowest of any line in Venezuela. Such a railway (from Maracaibo to Castilletes) would provide transportation directly to deep water for the products of the Maracaibo district, which now have to be transferred from the port on the lake to Curaçao for transshipment to the United States and Europe. Exports from Maracaibo must now be carried in small vessels of less than 12-foot draft on account of the shallow entrance to Lake Maracaibo.

Judging from all reports on the subject, it would appear as if these coal fields were by far the most important (on account of their size and the excellent quality of the coal) of any within easy distance of the Panama Canal, with the possible exception of those of the Cauca Valley at Cali, in Colombia, accessible by railway from the Pacific coast.

The contract for the new railway was signed by the President of Venezuela on July 3, 1917, the company having two years in which to begin construction operations and five years in which to complete the line.¹

RAILWAYS.

The railways of the Maracaibo commercial district number three, leading from lake or river ports (touched by the lake steamers from Maracaibo) to the foot of the mountains in the direction of the respective capitals of the three Andean States. None of these roads has as yet reached its objective on account of the nature of the terrain encountered, making for heavy cost of construction. Cart

¹ The coal lands are controlled by the old Maracaibo Coal Co., which has been absorbed by the Caribbean Coal Co., together with the old Zulia Asphalt Co. It is understood that the Caribbean Coal Co. will operate the railway and the port at Castilletes and attend to the marketing and transport of the coal and asphalt produced by the two subsidiaries mentioned. There is no recent information on hand to indicate any active development to date—that is, up to December 31, 1920.

roads are now under active construction by all three States to connect the capitals with the present ends of the railways that serve them.

GRAN FERROCARRIL DE LA CEIBA.

The Gran Ferrocarril de La Ceiba is owned by a private corporation and runs from the lake port of La Ceiba (about 88 miles by water from Maracaibo) to Motatan, the present end of the line, 20 miles from the capital city of Trujillo, with which it is connected by a cart road, with a branch leading to the important town of Valera, 6 miles from Trujillo.

The total rail length of the line is 81.36 kilometers (1 kilometer=0.62 mile) for the main line, with an additional 3.67 kilometers to the sugar central "La Ceiba" near the port. The gauge is 3 feet, the rail weight 40 pounds to the yard, the maximum grade 3 per cent, the minimum radius of curve 80 meters (1 meter=3.28 feet), and there are 37 bridges with a combined length of 1,356 meters. The rolling stock consists of 6 locomotives (with a total weight of 135 tons), 7 passenger coaches, 7 flat cars, 34 box cars, and 2 stock cars. (No new equipment has been provided since the outbreak of the war on account of the high prices and delayed deliveries.) Present equipment is sufficient to take care of present traffic needs. The passenger tariff equals 5.3 cents per mile for first class and 3.8 cents per mile for second class. The freight rate is equal to 31 cents per ton-mile.

The capital investment and capital stock are both stated as 8,000,000 bolivars (\$1,544,000). The cost of construction was 98,328 bolivars (\$18,977) per kilometer. Shares are of a par value of 500 bolivars (\$96) each. In August, 1920, these were quoted on the Maracaibo exchange at 350 to 360 bolivars (\$68 to \$69). Construction was begun in 1895 and the line opened for passenger traffic in 1899, passenger traffic increasing from a little over 1,000 persons a year to nearly 16,000 persons in 1916. The best freight years were 1912 and 1919, when more than 21,000 tons were transported. When this line was only half of its present length and the capital invested only 2,000,000 bolivars (\$386,000), it earned 17½ per cent, whereas now its returns are only about 5½ per cent. In 1912 the road carried 21,051 tons of freight, and in 1915 only 14,874 tons. Like most Venezuelan railways, the line suffers from the competition of the pack mule and the two-wheeled cart of the country. Persons communicating with the company should address Sr. R. Belloso Rincon, Gerente, Maracaibo, Venezuela. There are, at present, no immediate plans for the continuance of the line to Trujillo.

GRAN FERROCARRIL DEL TACHIRA.

The Gran Ferrocarril del Tachira, 120 kilometers (1 kilometer=0.62 mile) in length, runs from Encontrados on the Catatumbo River (which is navigable up from Lake Maracaibo for shallow-draft lake steamers) southward to its present terminus at the station of La Uraca in the direction of San Cristobal, the capital of the State of Tachira. It is the principal outlet for the Venezuelan State of Tachira and the passenger traffic of the Colombian Department of Norte de Santander. The gauge is 1 meter (3.28 feet), the rail

weighs 40 pounds to the yard, and the maximum grade is 2 per cent, with a minimum curve radius of 80 meters. There are six bridges, with a total length of 332 meters. The country traversed for a distance of 110 kilometers is fairly level, the last 10 kilometers of the line being in broken ground. Difficulties of construction will begin beyond the present end of the line in the effort to reach the ultimate objective of San Cristobal, with which the railway terminus is now connected by a wagon road, with a branch to the Colombian frontier at Urena.

The average construction cost per kilometer is given as only 61,135 bolivars (\$11,799) for the first 110 kilometers of the line, but the cost of the other 10 kilometers brought this average up to 93,333 bolivars (\$18,013).

Rolling stock consists of 7 locomotives (with a total weight of 210 tons), 6 passenger coaches, 34 flat cars, 32 box cars, and 4 stock cars. The passenger tariff is equal to 6.8 cents per mile for first class and 3.4 cents per mile for second class. The northbound, or export, freight rate is 21 cents per ton-mile, and the southbound, or import, freight rate is equal to 35 cents per ton-mile. The amount of cargo carried annually varies greatly, depending upon the price and size of the local coffee crop. In 1902 the line carried a total of 11,113 tons, and in 1903, 27,582 tons, the latter being the highest tonnage ever transported. The road was opened to traffic in 1896. Passenger traffic has increased from a little over 1,000 persons to the high figure of 19,070 in 1919.

The capital stock of the company is 7,000,000 bolivars (\$1,351,000), fully paid in. American interests own some of the stock and, contrary to the usual rule in Venezuela, nearly all the material and equipment is of American manufacture. Because of its moderate capitalization and low construction cost, this railway shows better returns than any of the other lines in the country. The gross earnings for 1913 were 10.88 per cent, compared with 8 per cent for the next best road. The principal difficulties of this line are with the floods of the Catatumbo River, which threaten the destruction of the river port of Encontrados; and the greatest obstacle to the growth of its traffic is the fact that the merchandise destined for its territory must undergo so many handlings en route that the cost is greatly increased and the consumption correspondingly diminished. Gross returns for 1919 were 1,571,381 bolivars (\$303,277) and the operating expenses 625,638 bolivars (\$120,748).

Persons communicating with the company should address Sr. Pedro N. Olivares, Gerente, Maracaibo, Venezuela. The shops are located at Encontrados.

At the present time there are no plans for the continuation of the line to San Cristobal. The State government is working on the repair and conditioning of the old cart road from San Cristobal to La Uruca.

FERROCARRIL DE SANTA BARBARA A EL VIGIA.

The Ferrocarril de Santa Barbara a El Vigia is now owned by the Venezuelan Government, which took it over from the French company that started its construction in 1892 under a guaranty. Its operation by the Government dates from 1895. In 1892 the road was

partly destroyed by an inundation of the Chama River; from that year locomotives operated only as far as kilometer 37 and cars were drawn by mules to kilometer 47, where pack-mule transport began for Merida, the line's ultimate objective in the State of Merida. In June and July of 1915 new floods destroyed still more of the line. The Government has appropriated its revenue to new construction work, and the work has progressed to the present terminus at El Vigia, making a total length of 60 kilometers (1 kilometer=0.62 mile). Of the three lines owned by the Government it is the only one operated at a profit. It is not managed directly, but is leased to J. A. Redondo, Santa Barbara, Venezuela.

The line runs from Santa Barbara (at the head of river navigation on the Escalante River) to El Vigia, beyond which the heaviest construction work to be encountered in railway work in the Venezuelan Andes is found, as two ranges of mountains have to be crossed before this line can reach Merida. The gauge is 1 meter (3.28 feet), the weight of rail 40 pounds to the yard, the heaviest gradient 2 per cent, and the minimum curve radius 100 meters. There are 15 bridges, with a total length of 138 meters. The rolling stock consists of 5 locomotives (with a total weight of 124 tons), 6 passenger cars, 12 flat cars, 14 box cars, and 1 stock car, this equipment being sufficient for the present traffic needs of the line, which is the principal outlet for the products of the State of Merida and the tributary territory on the eastern side of the main range east of Merida. The passenger rate is 6 cents per mile for first class and 4 cents per mile for second class. The freight rate is equivalent to 39 cents per ton-mile for import cargo, and 34 cents per ton-mile for export freight.

The capital of the road and the construction cost are stated as 3,021,880 bolívares (\$583,223). This cost equals 50,365 bolívares (\$9,720) per kilometer, the lowest for any railway in Venezuela. In 1911 and 1914 the line carried a total of more than 13,000 tons of freight. The highest total was in 1919, when 17,821 tons were handled, the total returns from all sources being 662,479 bolívares (\$127,858) and the expenses 333,337 bolívares (\$64,334).

The State government is constructing a cart road from Merida to the end of this line at El Vigia, the road having reached Lagunillas in November, 1920. (For freight rates on coffee, etc., for export, see page 195.)

OUTLOOK FOR FUTURE.

No new railway construction is contemplated at the present time for the Maracaibo district, except the line projected by the Caribbean Coal Co. (see p. 214).

To connect the three Andean capitals of the district with Lake Maracaibo serious difficulties of railway construction are encountered. There are first the lowlands of the immediate lake and river region to be crossed, where the terrible tropical climate and floods during the rainy season make for delays and excessive costs. When the route is once out of the lowlands, the wall of the mountains is encountered, necessitating heavy rock work, heavy grades, and the usual difficulties attending railway building in a mountainous country. There is also the great scarcity of labor, not to mention the cost of transshipment of material and supplies at Curaçao and again at

Maracaibo. Immediate improvements will be limited to the new cart roads which the Government has been so successful in constructing in other parts of the country, and over which the mule carts can compete with the railways, even for long hauls, such as that from Caracas to Valencia. On the completion of these roads, passenger traffic will follow the same lines as in other more developed regions. The light American automobile will be universally used.

INDUSTRIES.

The following are the companies listed on the Maracaibo stock market:

Name of company.	Capital.	Nominal value of share.	Quotations, August, 1920.
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Gran Ferrocarril del Tachira.....	11,200,000	400	340-350
Gran Ferrocarril de La Ceiba.....	8,000,000	500	350-360
Central Azucarero Zulia.....	6,500,000	400	210-220
La Hispano-Venezolana.....	1,750,000	500	(1)
Cerveceria de Maracaibo.....	1,728,000	1,000	2,250-2,300
Petrolifera Rio Pauji.....	1,500,000	500	240-270
Same, subscribed.....			700-800
Banco de Maracaibo.....	1,250,000	333½	360-400
Central Ceiba.....	1,000,000	25	5-6
Union Agrícola del Zulia.....	1,000,000	400	100-105
Puerto de La Ceiba.....	800,000	2,000	1,000-1,200
Seguros Marítimos de Maracaibo.....	500,000	500	800-1,000
Tranvías de Maracaibo.....	400,000	400	1200.85
Proveedora de Agua.....	400,000	400	70-80
Banco Comercial.....	400,000	200	200-240
Seguros Marítimos del Zulia.....	250,000	500	500-520
Aserradero de Maracaibo.....	2,000,000	500	480-500
Central Gran Vía.....	2,000,000	500	500-525
Central Venezuela.....	7,800,000	520	1,550-1,600
Maracaibo Electric Light.....	500,000	50	375-400
Caribbean Coal Co.....	2,000,000	50	6-8

¹ In liquidation.

² United States currency.

The Maracaibo brewery ships bottled beer to the cities of the Andes and to Cucuta, in Colombia. All materials for brewing are imported from the United States. There are four small cotton gins and cottonseed-oil mills making oil for the local soap factories, of which there are four or five in operation making cheap grades of soap for the local and interior markets. The chemicals used in soap making are all imported from the United States since the war. The largest sawmill is that of the Aserradero Maracaibo, capitalized at 2,000,000 bolivars (\$386,000).

Stocks of the oil companies listed are quoted in New York or London, as the case may be.

Connected with the two larger sawmills are woodworking shops turning out moldings, sash and door products, and furniture. Furniture is also made in small establishments all over the district for the local demand and is of rather good quality, as the native woods resist the attacks of the white ant and the boring weevil, so destructive to the softer woods. There is little demand for imported furniture, apparently on account of the high import duty, which, including surtaxes, amounts to \$10.28 per 100 pounds of gross weight on furniture of common wood, willow, rush, or cane, and \$17.13 on

furniture of common wood gilded, or of fine wood, and on all upholstered furniture. Upholstering materials and fittings are imported in small quantities by the wholesale importers, who retail them to the small shops.

Small shops for making carts, carriages, etc., are also found all over the district. The axles and fittings are imported by the hardware dealers.

Two tanneries supply the local market with the coarser grades of leather, used principally for the universal sandal, or "alpargata," of the people. The finer grades of shoe leather and shoe findings are imported from the United States. All saddle and harness work is also done locally. The boot and shoe industry is protected in Venezuela by a customs duty of \$274.10, including surtaxes, per 100 pounds of gross weight. Nearly all of the shoes and slippers required in the district are produced by small shoe shops, which turn out a very good product at prices below the cost of the imported article. The usual practice by people who can afford to wear shoes is to have their footwear made to order as required.

Practically all of the straw hats, which are worn all the year round, are also produced locally, the straw braid being imported from the United States. The small numbers of felt hats required are imported from the United States, England, and Italy. Felt hats are usually shipped in small lots by parcel post and should be packed in cylindrical bales, with the hats placed one inside of the other to fit tightly, attention being given to relative sizes when the packing is done. Inside of the outer protective covering of good jute there is placed a "sewed-to-fit" waterproof lining. If properly and carefully packed, the finest felt hats need no blocking on receipt by buyer. The Borcelino factory of Italy, which does a large business all over South America in lightweight, fine-quality felt hats, packs in this manner.

Clay and cement bricks and tiles are manufactured locally in large quantities in small yards. Most of the more modern buildings have cement or cement-tile floors and tile roofs.

Until very recently, all clothing was made up locally, men's suits being made by local tailors in small shops. During the last two years the ready-made lightweight suits, such as Palm Beach, etc., have had a considerable sale, the suits being imported from the United States. On light material the native tailors do very good work, and, though the goods is somewhat more expensive than in the United States, the cost of making up is so low that clothing costs the wearer less in the end.

BANKING.

The only banks of the district are located in Maracaibo, though the Banco de Venezuela and the Banco de Caracas, the two largest native institutions with head offices in Caracas, maintain branches in Maracaibo and agencies in Trujillo, Valera, Merida, and San Cristobal. There are two purely local native banks, the Banco de Maracaibo and the Banco Comercial, and two native insurance companies, the Compañía de Seguros Marítimos de Maracaibo and the Compañía de Seguros Marítimos del Zulia, the former with a

capital of 500,000 bolivars (\$96,500) and the latter with a capital of 250,000 bolivars (\$48,250), and both doing a general marine-insurance business covering shipments throughout the district and coastwise in Venezuela. The Maracaibo Marine Insurance Co. (Cía. de Seguros Marítimos de Maracaibo) also covers ocean shipments to Curaçao for transshipment. Both insurance companies have been doing a good business, and their stocks are quoted above par, that of the first-named company being at a 100 per cent premium by the end of the first half of 1920.

Prior to the establishment of branches of foreign banks the two native banks did a small business in comparison with the banking business carried on by the larger commercial houses, which attracted more deposits than the banks. The amount for all houses in 1917 was estimated at about \$2,000,000, while the Banco de Maracaibo had only \$86,078, according to its balance sheet of June 30, 1917.

The two native banks, the Banco de Maracaibo and the Banco Comercial, are banks of issue, and while their notes are not legal tender under the national banking laws, such notes circulate freely in the district, as do the notes of the two Caracas banks, the Banco de Venezuela and the Banco de Caracas.

In the case of exchange business with the interior, as well as foreign exchange, the commercial houses formerly did a larger volume of business than the banks. Most of these houses with headquarters in Maracaibo have branch offices in the capitals of the Andean States and in Cucuta which purchase products for export for their principals and sell for them merchandise imported through Maracaibo from abroad. This condition enables them to make transfers of funds more cheaply than any other organization in the district. The situation appears to have been the same with foreign exchange. Exporters who were not importers of merchandise directly, or those who exported more than they imported (as is the usual case in the interior), sold their drafts in the open market in Maracaibo or their nearest large city, usually immediately after credit was established abroad. The sale of the drafts was generally negotiated by brokers soliciting from different purchasers, very often in excess of the amount offered, drafts then being given to those offering the highest rates.

FOREIGN BANK BRANCHES.

The first foreign branch bank to be opened in Maracaibo was that of the Royal Bank of Canada, established in 1917, followed by that of the National City Bank of New York. The foreign banks make exchange transactions an important part of their business and afford relief from the high rates previously charged by the native institutions. Greater credit facilities were also provided during the prosperous years following the armistice; interest rates were lowered to 8 per cent, and collections were greatly facilitated. Another advantage was the furnishing of more and better commercial information to American houses interested in extending their trade in this district.

AMERICAN MERCANTILE BANK.

Later in the same year (1917) a branch of the Banco Mercantil Americano de Caracas, affiliated with the Mercantile Bank of the

Americas of New York, opened a branch in Maracaibo. In 1920 an agency was established in Tovar for the purpose of better taking care of the coffee movement from the interior and the local producing district.

Until late in 1920, when its operation was discontinued, there was also the Mercantile Overseas Corporation, affiliated with the Mercantile Bank of the Americas and doing a general merchandising and commission business, as well as exporting the products of the country.

BANCO DE MARACAIBO.

The Banco de Maracaibo was founded in 1889. Administration is by three principal and three alternate directors, five principal and five alternate commissioners, and two fiscal inspectors. It is a bank of issue. Operations are confined to the city of Maracaibo and its commercial district.

The balance sheet as of July 31, 1920, showed: Bills in circulation, 1,823,000 bolivars (\$351,839), with 52,000 bolivars (\$10,036) in hand; capital stock issued, 937,500 bolivars (\$180,937), with 312,500 bolivars (\$60,312) in reserve; reserve fund, 125,000 bolivars (\$24,125); values held in custody for loans, 1,164,630 bolivars (\$224,774); sight deposits, 1,146,846 bolivars (\$221,341); discounts, 12,229 bolivars (\$2,360); term deposits, 73,004 bolivars (\$14,090).

The cash account showed items of 627,848 bolivars (\$121,175) in gold coin; 65,568 bolivars (\$12,655) in silver coin; mortgages on retro-sale account, 315,000 bolivars (\$60,795); obligations due, August, 1920, to March, 1921, 1,228,103 bolivars (\$237,024); open accounts on a 30-day basis, 988,286 bolivars (\$190,739); loans of real and personal character, 43,971 bolivars (\$8,486); and loans of personal indorsement, 890,745 bolivars (\$171,914).

BANCO COMERCIAL DE MARACAIBO.

The Banco Comercial was established in Maracaibo in September, 1915, with a capital of 400,000 bolivars (\$77,200), divided into shares of 200 bolivars (\$39) each. At the time of its organization this bank promised to become of considerable local importance, as it offered relief from the high interest rates then prevailing. On August 31, 1920, this institution had a total of 793,240 bolivars (\$153,095) of bills in circulation, with 6,760 bolivars (\$1,305) more in reserve. The reserve fund was 16,192 bolivars (\$3,125); sight-deposit accounts, 55,358 bolivars (\$10,684); in savings department, 30,513 bolivars (\$5,889) on deposit. The cash in gold was 315,860 bolivars (\$60,961), in silver coin 48,079 bolivars (\$9,279), and in national-bank bills of other banks 52,735 bolivars (\$10,178). Loans on open-account charge, secured by real and personal property and signature, amounted to 94,695 bolivars (\$18,276); loans secured by personal indorsement totaled 103,010 bolivars (\$19,881). The total balance shown was 1,349,185 bolivars (\$260,393).

ASPECTS OF RECENT BANKING BUSINESS.

Banks all over Venezuela have been passing through a very difficult period during the last half of 1920. During the prosperous years following the armistice, when the principal export product of the

Maracaibo district, coffee, was selling in New York at unheard-of prices (averaging around 26 cents per pound), with all other products in proportion, the banks had their share of increased movement of business in all lines. All industrial stocks, real property, and other values followed the tendency of the times toward higher prices, and large stocks of merchandise, purchased at the peak of high prices in 1919 and the spring of 1920, were imported, the total accumulation really being greater in volume than the normal consumption of the district called for on anything like a conservative basis. There also existed a speculative market in Maracaibo for the petroleum and sugar companies' stocks, and there was great speculation in coffee and other export products. This situation was combined with considerable local competition among the various banks doing business in the capital and business center of the district, this being reflected in the form of excessive loans and a general over-extension of credit. With the sudden drop in the values of coffee and other products, including sugar, local values also fell in proportion, and stocks of goods could not be disposed of at a profit, as similar merchandise could then be purchased in New York for less. Banks were forced to restrict credit heavily, and a difficult period of readjustment followed in which losses were sustained all around. Some 200,000 sacks of coffee from the preceding year's crop remained in the district unsold, on account of the high price paid for it during the previous speculative period and the drop in the market for this commodity.

Importers have to ask for credit mainly because they can not pay before they dispose of the merchandise handled in the interior, there not being money enough to finance the entire trade of the district. As a direct result of the credit restrictions put in force during the last half of 1920, export commission houses in New York would no longer accept shipments of exports from Venezuela on consignment, and, in turn, even the foreign branch banks would no longer make advances on such shipments.

Dollar exchange on New York, at a heavy discount during the war years when trade restrictions greatly affected imports from the United States, rose to premiums varying between 12 and 14 per cent, constituting a further burden on the importer who had to pay large bills for his spring purchases of merchandise, made at high prices and in anticipation of another good year in coffee, which did not materialize, for the reasons stated.

It was at first hoped that the exportation of some \$4,000,000 worth of sugar to the United States toward the end of the year, or during the first months of 1921, would relieve the exchange situation through the sale of these drafts in Maracaibo. This hope was also doomed to disappointment on account of the drop in the sugar market, and it was no longer thought possible to export sugar to the United States, in competition with Cuba and Porto Rico, with New York prices around 4½ cents f. o. b.

BUSINESS HOUSES AND COMMERCIAL METHODS.

Prior to the war the largest commercial houses were conducted by Germans, and many of the present firms are financed by German

capital and controlled by the owners of the former German houses, though the business is apparently managed by Venezuelans. Also, nearly all of the large houses of Caracas have branch stores here, such as the Bazar Americano, Almacen Americano, etc., and other Caracas importers cover the territory with traveling salesmen periodically, competing with local dealers for the import trade of the interior of the district. There are two houses with a capital of about \$500,000, one with a capital of \$200,000, four with a capital of \$100,000 or over, while the rest range from \$20,000 to \$50,000, roughly. The total number of importers of merchandise is 45.

San Cristobal has 10 business houses importing general merchandise; 7 of these have a capital of \$20,000 or more, but only 1 of them does a large business. In Trujillo and Merida there are about half a dozen fairly large importers who buy principally at wholesale in Maracaibo, though several are direct importers on a small scale.

As an average estimate, it may be stated that more than half of the import and export business of the district centering in Maracaibo is controlled by seven or eight of the larger houses whose management is German.

The Maracaibo houses advance money to the interior on crops and on products stored with them, or purchase them, or ship them on commission. Very little business is done in imports on a commission basis, the larger importing houses preferring to buy outright and sell to the retailers in Maracaibo and the centers of the interior on their own terms; this means a liberal credit allowance, based on the six-months system of the country; that is, from one crop season to another. There are a few large producers of coffee in the interior who ship and sell directly to their connections in the United States, merely paying a commission in Maracaibo for transshipment and handling services.

Nearly all small retailers want to become direct importers and constantly endeavor to secure goods from abroad by direct shipment on credit. Extreme care should be exercised by firms in the United States in the selection of customers in the interior asking for terms, unless the American houses have their own agents in Maracaibo, who receive the goods from the customs and take care of drafts and all formalities of payment. Shipping documents with consular invoice and draft attached are no protection, even if in the hands of the bank acting in the collection, since, for a small fee, the person whose name appears on the consular invoice can have a copy made at the customhouse from that sent by the Venezuelan consul at port of loading, and can then secure the shipment from the customs upon the payment of the import duties. In other words, the Venezuelan law recognizes the consignee as the owner of the goods whether he has paid for them or not.

It is thought that the better plan is to protect the large importer who has an established line of credit and known connections, together with sufficient commercial capital, and let him take care of the small trade of the interior. In fact the possession of sufficient commercial capital is one of the strongest means for meeting competition that the larger houses have. They are in a position to take care of the long terms demanded by the interior, whereas the small

importer with limited capital can not do so unless he in turn receives accommodation from the seller.

On account of the lack of exchange facilities in the interior—the cost of transfer of funds from a given point to Maracaibo or vice versa often being as much as 5 per cent, while the rate is only 1 per cent under normal conditions—most firms of the interior prefer to buy up coffee and other products produced in their regions and ship these to Maracaibo in exchange for such merchandise as they require for their trade. This business is generally handled on the “open-account” system, long in vogue in the country, and it has the advantage of allowing an extra profit to the dealer on his export business.

In summing up the commercial situation in general (and the statement also includes banking), it may be said that the commercial needs of the district are very well taken care of and that business facilities are entirely adequate to the present economic production and life. In fact merchandising is somewhat overdone, and competition is very keen for the business offering.

Salesmen making the Caribbean territory and visiting Caracas usually come to Curaçao and make the trip from there to Maracaibo, returning to Curaçao for a steamer east or west along the coast, or passing on into Colombia for the Magdalena River route. Many importers of Cucuta prefer to buy direct and not through importers of Maracaibo.

It is not thought wise to always allow the Caracas representative to have full charge of the Maracaibo territory unless a branch office is maintained there. Certain large Venezuelan firms with headquarters in Caracas have found it necessary to open offices in Maracaibo in order to secure their share of the trade each season.

FOREIGN TRADE OF MARACAIBO.*

The official foreign trade statistics of Maracaibo for all of 1919 have recently been made available. The values of exports, as given in the Venezuelan official statistics, are always understated and may be depended upon only for purposes of comparison of one year with another and the relative importance of the different countries. An idea as to just how far the figures differed during 1919 from the values according to the consular declared-export return may be gained from the following illustration. The value of the coffee shipped to the United States is given in the Venezuelan official statistics as \$10,936,060, while, according to the invoices certified at the consulate, it amounted to \$19,970,174. The Venezuelan figures are not based upon actual values, but are arbitrary values placed on the different items of export in order to compute the value of the stamps to be placed on the shipping documents.

According to official statistics, however, \$14,926,153 was the value of the total exports from the Maracaibo district during 1919, showing an increase of \$9,382,872 over 1918 and \$5,940,697 over 1913. According to the same figures, \$12,209,971 was the value of the exports to the United States during 1919, showing an increase of \$8,531,392

* This section giving statistics of foreign trade is by Consul Dudley G. Dwyre.

over 1918 and \$7,241,701 over 1913. Even before the war, in 1913, the United States took the greater portion of the products of this district, with Germany following at not a great distance (the figures being \$4,968,270 and \$2,891,265, respectively), while the United Kingdom scarcely entered into the export trade of the district. During 1918 and 1919 Germany was entirely eliminated, and while this is true of the United Kingdom during 1918, the value of the exports to the latter country during 1919 came to \$31,515.

In the consideration of the export figures, especially for 1918 and 1919, it must be borne in mind that a large percentage of the exports to Curaçao, which in 1919, 1918, and 1913 were valued, according to the Venezuelan official statistics, at \$2,106,690, \$1,762,438, and \$153,509, respectively, was sent to the United States. France took products valued at \$661,269 in 1913, but it took nothing during 1918; during 1919, however, the value of the exports to that country was \$307,341.

TRADE BY COUNTRIES.

Below is a summary of the value of the foreign trade of the Maracaibo district for the years 1913, 1918, and 1919 (in preparing the following statistics all conversions from bolivars to dollars were made at the normal rate, 1 bolivar being equivalent to \$0.193):

Countries.	Imports.			Exports.		
	1913	1918	1919	1913	1918	1919
Austria.....	\$2,032			\$3,547		
Belgium.....	100,053			6,963		
Canada.....				8,685		\$23
Cuba.....		\$2,264	\$1,360	2,705		31,512
Curaçao.....	9,117	33,617	97,857	153,509	\$1,762,438	2,106,690
Colombia.....		18,240	2,057	39,196	44,959	83,887
France.....	77,744	12,951	7,423	661,269		307,341
Germany.....	781,798			2,891,265		
Italy.....	117,709	1,140	20,647	149,338		
Netherlands.....	82,959		57,849	31,378		74,513
Panama.....				3,839		
Porto Rico.....		54,387	54,321	2,527	22,988	4,895
Spain.....	110,864	28,372	141,277	8,613	4,162	14,997
United Kingdom.....	782,511	84,305	789,441	53,352		31,515
United States.....	1,548,270	1,285,763	6,096,973	4,968,270	3,678,579	12,209,971
All other countries.....		2,284	2,722		29,155	59,809
Total.....	3,613,057	1,523,323	7,271,927	8,984,456	5,542,281	14,925,153

PRINCIPAL EXPORTS.

The following table shows the principal exports from this district in 1913, 1918, and 1919, together with the percentage of each item shipped to the United States. These percentages, however, are not exact, since most of the exports shipped to Curaçao eventually find their way to the United States.

Articles.	1913			1918			1919		
	Pounds.	Value.	Per- cent- age to United States.	Pounds.	Value.	Per- cent- age to United States.	Pounds.	Value.	Per- cent- age to United States.
Cocoa.....	687,939	\$99,524	68	795,529	\$124,342	99	946,938	\$186,782	87
Coffee.....	76,011,304	8,165,849	55	49,680,926	3,986,210	85	86,028,161	12,339,647	90
Copaiba.....	94,976	19,868	72	66,223	34,752	100	28,616	8,693	100
Divi-divi.....	8,042,530	176,300	.....	6,277,798	59,938	33	13,222,721	265,927	36
Fish sounds.....	126,947	21,410	60	148,315	18,658	94	150,921	9,331	19
Hides.....	1,960,364	286,216	83	568,454	101,367	84	1,276,610	359,459	94
Maize.....	131,747	2,189	.....	9,312,709	195,675	6	6,101,694	135,160	5
Panela (brown sugar).....	2,210,677	52,265	.....	4,876,241	56,992	30	2,284,129	89,839	3
Skins.....	234,521	44,780	100	44,433	4,461	62	411,056	168,965	100
Sugar, n. e. s.....	1,623	70	.....	15,190,486	539,870	.....	21,482,367	830,861	54
Woods.....	26,662,670	75,412	12	5,591,243	110,747	6	8,654,017	64,861	.....
All other articles.....	4,395,903	140,573	13	54,970,317	299,269	8	37,459,332	466,638	10
Total.....	.....	8,984,456	55	.....	5,542,281	66	.....	14,925,153	82

¹ A sample only.

² These items include 27,887 tons of fuel and crude petroleum, valued at \$194,181, shipped during 1918, and 15,894 tons, valued at \$137,636, shipped during 1919, all of which was sent to Curaçao.

Coffee receipts in Maracaibo, from the coffee-growing sections of the interior, in 1918 totaled 477,429 bags, and in 1919, 730,619 bags. The 1919 export figures illustrate the fact that large quantities of the 1918 crop were held over and shipped during 1919, after war restrictions were removed.

EXPORTS INVOICED FOR UNITED STATES.

Declared exports from the Maracaibo district to the United States during 1920 were valued at \$9,524,183, a decrease of 56 per cent as against 1919. The following table lists the articles invoiced in both years, according to quantity and value:

Articles.	1919		1920	
	Quantity.	Value.	Quantity.	Value.
Bark:				
Guiana..... pounds.....	17,305	\$2,810	.....	.....
Mangrove..... do.....	.....	.....	37,489	\$1,170
Maracaibo..... do.....	3,639	380	10,531	1,135
Simarouba..... do.....	6,368	1,499	15,570	1,587
Bones..... do.....	.....	.....	67,387	1,912
Cocoa..... do.....	818,461	275,311	794,114	218,844
Coffee..... do.....	83,166,547	19,970,174	42,042,827	8,328,356
Copaiba..... do.....	28,122	14,186	50,154	32,181
Corn..... do.....	35,801	1,145	331,797	10,611
Divi-divi..... do.....	4,870,539	175,407	3,521,565	89,246
Ethnological specimens.....	.....	1,200	.....	.....
Fish sounds..... pounds.....	14,601	3,044	7,934	398
Hides..... do.....	1,448,937	647,159	777,634	263,403
Skins:				
Calf..... do.....	4,500	2,263	1,084	398
Deer..... do.....	19,003	5,253	8,104	2,183
Goat..... do.....	385,200	308,263	271,867	167,147
Sugar:				
Brown..... do.....	75,118	5,164	1,398,174	112,852
Muscovado..... do.....	.....	.....	1,174,453	133,471
Other..... do.....	11,545,740	609,655	231,082	56,436
Tobacco.....	do.....	10,012	4,031	.....
Wax, vegetable.....	do.....	.....	2,669	1,088

Articles.	1919		1920.	
	Quantity.	Value.	Quantity.	Value.
Woods:				
Box.....pounds..	90,133	\$2,936	51,040	\$215
Curarire.....do..	33,066	231	41,177	245
Ebony.....do..	68,722	1,177	339,988	3,208
Roble.....do..			360,910	3,323
Vera.....do..	82,612	1,661	109,360	408
Zapatero.....do..	1,134,850	22,772	5,632,257	91,926
Wool.....do..	75,531	15,500	3,439	276
All other articles.....do..		54,710		2,160
Total.....		22,125,931		9,524,183

Returned American goods totaled \$14,723 in 1920, compared with \$19,663 in 1919. Shipments to Porto Rico in 1920 were valued at \$3,754 and in 1919 at \$2,212. No invoices were certified to the other insular possessions of the United States.

STATISTICS OF IMPORTS.

According to the Venezuelan official statistics, the value of the imports to the Maracaibo consular district during 1919 increased by \$5,748,604 (377 per cent) over 1918 and \$3,658,870 (101 per cent) over 1913. Included in these figures is gold coin to the value of \$2,943,134 in 1919 and \$312,640 in 1913. The increase in the value of imports may be partly explained by the higher prices paid during 1919 for all items than during the other two years named, especially 1913. Even before the war the United States led in supplying this market, with the United Kingdom and Germany following in about equal importance. During 1918 and 1919 the imports from Germany were nil; from the United Kingdom they were valued at only \$84,305 during 1918, but in 1919 they were \$789,441, slightly exceeding in value those for 1913. Imports from the United States during 1919 were valued at \$6,096,973, as compared with \$1,548,270 for 1913 and \$1,292,763 for 1918. These figures include gold coin, of which \$2,885,324 was imported in 1919 and \$312,640 in 1913.

The following table gives the value of the principal imports into Maracaibo by principal countries for 1913, 1918, and 1919:

Articles and countries of origin.	1913	1918	1919	Articles and countries of origin.	1913	1918	1919
Candy:				Grits and sago:			
United States.....	\$18,467	\$9,165	\$24,914	United States.....	\$3,624	\$520	\$27,779
United Kingdom.....	1,106			Germany.....	1,136		
Germany.....	795			All other countries.....		960	271
All other countries.....	2,053	12	804	Liquors:			
Canned goods:				United States.....	9,932	30,562	35,735
United States.....	16,173	17,234	40,087	United Kingdom.....	35,062	1,722	29,025
United Kingdom.....	4,098	77	794	Germany.....	2,959		
Germany.....	9,183			All other countries.....	10,235	4,393	24,358
All other countries.....	13,418	1,228	12,983	Rice:			
Crackers:				United States.....	394	8,820	33,920
United States.....	20,516	2,269	23,582	Germany.....	31,621		
United Kingdom.....	373		1,746	All other countries.....	20,401		
Germany.....	3,709			Sardines:			
All other countries.....	242		232	United States.....	529	487	18,041
Flour:				United Kingdom.....	152		
United States.....	140,758	3,576	202,580	Germany.....	75,686		
Germany.....	35			All other countries.....	24,915		6,480
All other countries.....	19	6,832					

Articles and countries of origin.	1913	1918	1919	Articles and countries of origin.	1913	1918	1919
Wines:				Ammunition:			
United States.....	\$967	\$4,933	\$3,518	United States.....	\$20,437	.....	\$20,075
United Kingdom.....	743	352	1,251	Germany.....	3,329	.....	.....
Germany.....	23,900	.....	.....	All other countries.....	42	\$106	154
All other countries.....	28,008	16,850	25,717	Copper:			
Bagging:				United States.....	3,340	15,962	9,887
United States.....	.....	8,140	13,882	United Kingdom.....	7,178	.....	5,737
United Kingdom.....	.....	.....	1,467	Germany.....	1,985	.....	.....
Germany.....	175	.....	.....	All other countries.....	8,270	248	2,760
All other countries.....	.....	9,413	10,978	Cutlery:			
Cordage and yarn:				United States.....	2,676	35,135	70,981
United States.....	14,469	19,124	25,859	United Kingdom.....	1,615	3,335	23,505
United Kingdom.....	1,033	231	2,264	Germany.....	12,067	.....	.....
Germany.....	11,520	.....	.....	All other countries.....	105	199	12,341
All other countries.....	2,807	87	12,961	Electrical goods:			
Cotton goods:				United States.....	18,862	33,251	72,708
United States.....	152,573	107,148	967,623	United Kingdom.....	54	.....	.....
United Kingdom.....	460,822	39,583	503,559	Germany.....	949	.....	.....
Germany.....	101,177	.....	.....	All other countries.....	.....	5	2,311
All other countries.....	107,367	7,108	36,540	Agricultural implements:			
Thread:				United States.....	33,625	15,614	.....
United States.....	207	5,371	21,967	United Kingdom.....	43,754	4,649	.....
United Kingdom.....	18,117	9,090	23,542	Germany.....	7,353	.....	.....
Germany.....	12,735	.....	.....	All other countries.....	396	145	2,040
All other countries.....	1,473	.....	.....	Iron and steel, n. e. s.:			
Calcium carbide:				United States.....	11,877	24,973	183,579
United States.....	12,110	7,362	23,444	United Kingdom.....	8,143	417	2,559
Cement:				Germany.....	53,530	.....	.....
United States.....	2,214	5,918	1,747	All other countries.....	3,531	283	10,594
Germany.....	11,257	.....	.....	Iron, structural:			
All other countries.....	52	12,733	16,650	United States.....	41,396	19,656	69,718
Drugs and medicines:				United Kingdom.....	1,184	.....	.....
United States.....	99,855	152,506	276,496	Germany.....	501	.....	.....
United Kingdom.....	8,989	13,544	62,282	All other countries.....	31	.....	132
Germany.....	27,452	.....	.....	Machinery:			
All other countries.....	45,007	6,775	18,879	United States.....	196,784	248,020	145,623
Disinfectants:				United Kingdom.....	46,378	834	13,537
United States.....	1,487	7,722	10,351	Germany.....	18,970	.....	.....
United Kingdom.....	.....	231	6,272	All other countries.....	4,692	58,067	35,596
Germany.....	3,755	.....	.....	Nails:			
All other countries.....	38	.....	.....	United States.....	3,608	8,768	42,758
Gasoline and kerosene:				United Kingdom.....	3,819	.....	5,465
United States.....	27,690	12,475	18,865	Germany.....	1,891	.....	.....
United Kingdom.....	.....	75	7,284	All other countries.....	293	613	18
Germany.....	603	.....	.....	Tin:			
All other countries.....	1,239	.....	835	United States.....	2,775	37,781	7,506
Lubricants:				United Kingdom.....	4,171	.....	30,105
United States.....	4,590	9,600	28,305	Germany.....	1,915	.....	.....
All other countries.....	514	.....	88	All other countries.....	.....	45	613
Paints and oils:				Tools:			
United States.....	13,800	35,449	70,802	United States.....	7,988	9,231	37,419
United Kingdom.....	1,724	.....	3,488	United Kingdom.....	5,041	49	2,048
Germany.....	6,845	.....	.....	Germany.....	4,566	.....	.....
All other countries.....	.....	.....	360	All other countries.....	2,332	149	.....
Perfumery:				Tubing:			
United States.....	1,081	13,254	36,932	United States.....	19,536	49,680	77,516
United Kingdom.....	3,281	.....	7,278	United Kingdom.....	8,190	.....	1,018
Germany.....	6,862	.....	.....	Germany.....	117	.....	.....
All other countries.....	4,135	139	2,040	All other countries.....	973	174	1,168
Rosin:				Wire:			
United States.....	10,513	14,659	21,084	United States.....	43,831	11,421	13,814
Germany.....	187	.....	.....	United Kingdom.....	503	.....	245
Stearine:				Germany.....	1,944	.....	.....
United States.....	1,032	27,693	58,627	All other countries.....	65	.....	.....
Germany.....	147	.....	.....		
All other countries.....	64,834	.....	4,593				

IMPORTATIONS BY PARCEL POST—COAST TRAFFIC.

Imports by parcel post into this district during 1919 weighed 46,881 pounds, as against 28,968 pounds for 1918 and 64,459 pounds for 1913. The imports by parcel post in 1919 came from the following countries: United States, 33,166 pounds; France, 8,062 pounds; England, 2,525 pounds; Italy, 1,126 pounds; Spain, 1,047 pounds; all others, 955 pounds.

The coastwise traffic of the port of Maracaibo consisted of entrances valued at \$21,571,544 in 1919, against \$10,216,804 in 1918

and \$6,824,597 in 1913, and clearances worth \$16,017,102 in 1919, \$8,022,854 in 1918, and \$4,070,871 in 1913. Coffee and sugar are the principal items of entrance, while foreign merchandise makes up a large portion of the clearances.

CONCLUSIONS AND RECOMMENDATIONS.

American exporters interested in extending their commercial operations in the Maracaibo district would do well to consider this territory as a separate commercial unit, divided from the rest of Venezuela. The development of the petroleum industry and the sugar industry, as well as that of the coal deposits, will, in the near future, give an additional purchasing value to the district that should not be ignored.

The trade was formerly controlled by the German houses, and these are still very strong. They have been doing their buying in the United States during the war and since the armistice on account of the industrial conditions obtaining in Germany, but their endeavor will be to go back to old connections as soon as possible. The share of the United States in the import trade of Maracaibo rose from 43 per cent in 1913 to 72 per cent in 1916 and to 84 per cent by the end of 1919. Branch offices should be established by American exporters to keep in closer touch with the market and to form direct commercial relations, thus insuring the present advantage for the future.

The indication of trade possibilities is always to be found in the coffee market and crop conditions, as upon this staple product depends the prosperity of the district year by year.

PUERTO CABELLO AND VALENCIA COMMERCIAL DISTRICT.

LOCATION AND TERRITORY.

The Puerto Cabello and Valencia commercial district includes the seven Venezuelan States of Lara, Carabobo, Cojedes, Falcon, Yaracuy, Zamora, and Portuguesa, occupying the central-western portion of the Republic. The district extends from the eastern boundary of the States of Carabobo and Cojedes west to the line of the Venezuelan Andes (which divide the territory of the Maracaibo Basin from the rest of the country), and from the coast line of the Caribbean Sea on the north to the Apure and Orinoco Rivers on the south.

The territory has a combined area of 46,870 square miles, amounting to 11.9 per cent of Venezuela's total area. The inhabitants number about 995,000, or 35 per cent of the total population of the country. The population is for the most part rural, depending upon agriculture and stock raising for its livelihood; there are only two mining enterprises of any note in the entire district, while manufacturing is limited to the city of Valencia and, in much less volume, to Puerto Cabello, the principal seaport.

TOPOGRAPHY AND CLIMATE.

The principal distinguishing features of the topography of the district are: The Coast Range, which extends to the west toward Barquisimeto, gradually ending in the Segovia highlands; the Lake Valencia Basin around Lake Valencia, a fresh-water lake which lies partly in the State of Carabobo and partly in that of Aragua (the basin being described as an old lake bed that now forms the richest and most developed agricultural section of the country); the great llanos, or plains, which stretch away to the south as far as the Orinoco and Apure Rivers for a distance of approximately 200 miles from the line of the low mountains and hills forming the barrier between them and the lake basin mentioned; the gradually ascending highlands of the extreme western area of the district, which rise out of the llanos to meet the high mountain range of the western Andes of Venezuela; and the so-called Segovia highlands, which lie between the western extremity of the Caribbean Coast Range and the northern spurs of the Andes—this region, though subject to variations of elevation, possessing the main features of a table-land which extends in a broad belt northward through the States of Lara and Falcon, with its main extent in the State of Lara around the capital, Barquisimeto (formerly called "Nueva Segovia," from which the region takes its name).

The level of most of this area ranges from 1,500 to 3,500 feet above sea level, but the plateau type is best developed in the Barquisimeto region, where the dry, arid plains are at times broken by small ranges and scattered groups of hills. The mountain mass of the Sierra of

Aroa and the lines of hills north of Barquisimeto, toward the coast, form its limits in that direction.

Included in this section of the district and extending in a general line parallel to the coast three well-defined mountain ranges of more or less uniform elevation rise from the plateau north of the Tocuyo River and are called the Cordilleras of Baragua, Agua Negra, and San Luis, the last named being the largest and extending for about 110 miles to beyond Coro, overlooking the Gulf of Venezuela to the west of the peninsula of Paraguana.

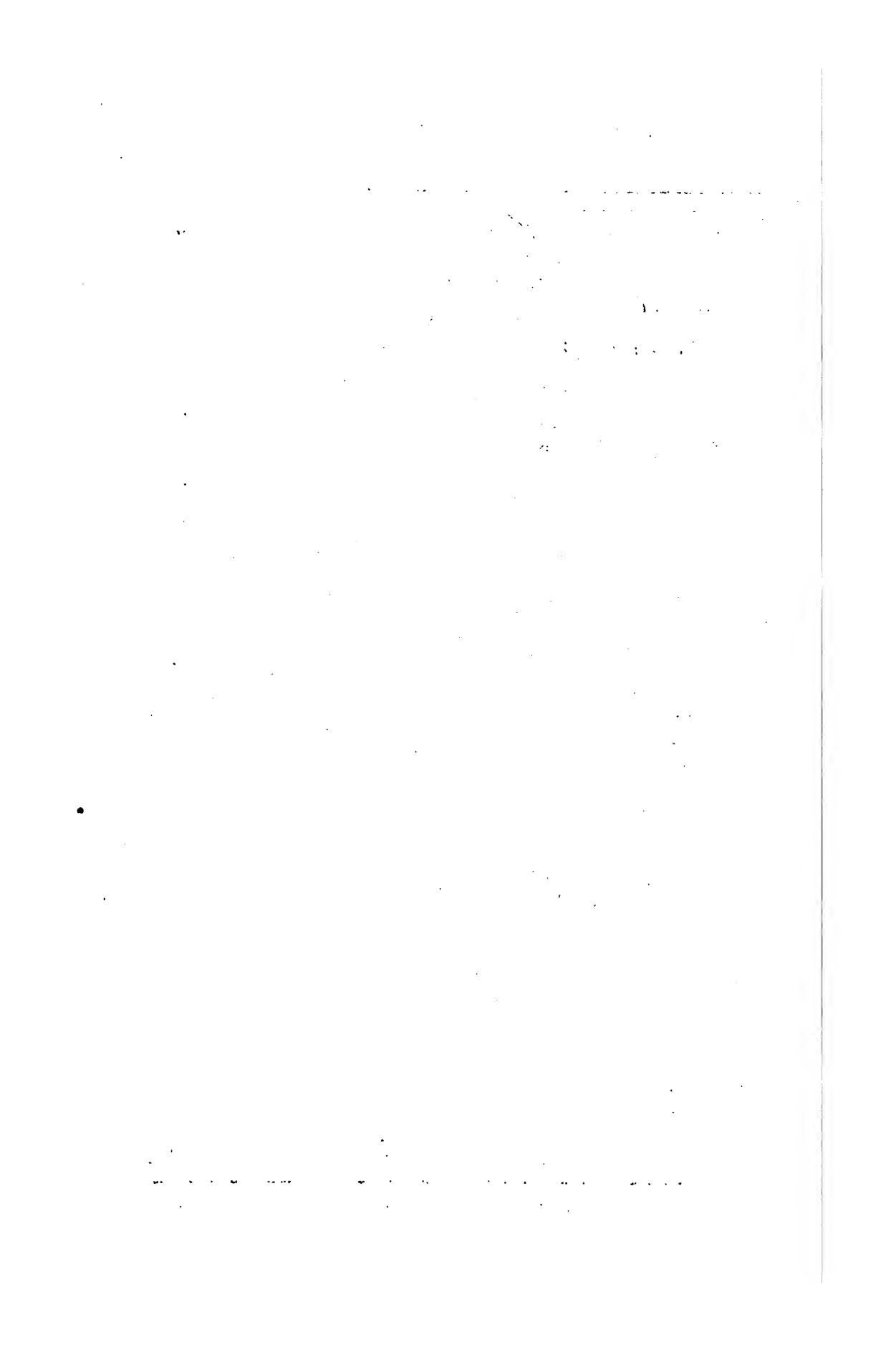
The Tocuyo and its tributaries form the principal drainage for the entire northern region described, the only other streams being small ones farther to the west, which flow directly into the ocean. From this general statement there should be excepted a small area around Barquisimeto, from which the watershed is to the south into the Portuguesa and thence to the Apure and Orinoco. The Tocuyo rises in the Andes and flows for some 330 miles in a general northeasterly direction, emptying into the Caribbean Sea just to the west of the port of Tucacas, which lies west of Puerto Cabello. The southern part of this area is arid and more or less barren, but the hills of the northern part are forest clad and there are fine, well-watered cattle plains around Carora in the Carora Valley.

The area along the immediate coast east and west of Coro is flat, sandy, and for the most part arid, as is also the peninsula of Paraguana.

The climate throughout the district, except in the higher levels of the mountains (say, above 4,000 feet), is essentially tropical, although that of the immediate coast is tempered by the constant trade winds. The areas of greatest heat and heaviest rainfall are those of the llanos, the highest mean annual temperature and precipitation being recorded in San Fernando de Apure, on the Apure River, at the extreme southern edge of the district. The wet season lasts from April to November, and much of this plains territory is inaccessible during the latter half of the season on account of extensive flooded areas.

The rainfall in the Valencia and Coast Range regions in the eastern part of the district is the same as for the Caracas district, averaging around 32 inches per annum between June and November, but this rainfall rapidly diminishes toward the west except in the higher elevations, reaching its minimum in the region of Coro and inland around Barquisimeto.

Except in the Carora Valley, along the Tocuyo River Valley, and in certain mountainous areas, the western part of the district is too arid for general agriculture; cacti abound, and the region resembles certain parts of Arizona, New Mexico, and the State of Sonora, in Mexico. The principal industry throughout this dry region is goat raising. Between San Felipe and Puerto Cabello and Valencia there is a region constituting an enormous alluvial fill of ancient geological formation and capable of agricultural development, but lacking in transportation and sufficient population. If it were not for the prevailing lack of labor, a connecting link of railway from the San Felipe Branch of the Bolivar Railway to Valencia, via Montalban or Las Trincheras, would tap this area and open it for development.



CHARACTERISTICS OF INHABITANTS.

Except in the larger towns and cities, where there are old Spanish families and important foreign colonists (as in Valencia and Puerto Cabello), the inhabitants of the district are of a mixed race, with the Indian strain predominant in the interior and the Negro along the coast. Away from the cities, the standards of living are decidedly low, conditions being rather primitive on the ranges, farms, and in the small villages of the interior. There exists a general scarcity of labor for field work, the people much preferring the cotton factories of Valencia and the meat-packing plant of Puerto Cabello, and the drift of the population is toward the towns.

POPULATION: DISTRIBUTION BY STATES, DISTRICTS, AND CAPITALS.

The State of Carabobo, with an area of 4,399 square kilometers (1 square kilometer = 0.3861 square mile) had an estimated population in December, 1917, of 193,234, giving a density of 43.9 to the square kilometer, the highest density in Venezuela except in the Federal District (Caracas), which has 70.2. The capital city, Valencia, has a population of 54,387, with 95,554 people in the Valencia district, or nearly one-half of the population of the entire State. The rest of the population is distributed throughout five other districts, or counties, of about equal population, the district capitals being the towns of Bejuma, Guacara, Montalban, Guigue, and Puerto Cabello.

The city of Valencia is situated at an elevation above sea level of 1,577 feet. Its mean annual temperature is 80° F. The death rate is estimated at 34.5 per 1,000 inhabitants for the city and district.

The State of Cojedes, with an area of 14,800 square kilometers, had an estimated population in December, 1917, of 104,424, giving a density of 7.1 to the square kilometer. The capital city, San Carlos, has 10,159 people, with a total of 17,963 in the district. The most populous district is that of Pao, with 20,907 inhabitants. The rest of the population of the State is distributed throughout five other districts, of which that of Anzoategui is the smallest, having only 3,697 inhabitants. The capital towns of the districts are Cojedes, Tinaquillo, El Baul, Pao de San Juan Bautista, Libertad, San Carlos, and Tinaco.

The town of San Carlos is on the llanos southwest of Valencia, communication with it being over the recently repaired cart road which forms part of the Great Western Highway. The elevation above sea level is only 495 feet. The mean annual temperature is 83.5° F. The death rate for the district is 47.4 per 1,000.

The State of Falcon, with an area of 24,800 square kilometers, had an estimated population in December, 1917, of 170,154, giving a density of 6.8 per square kilometer. The capital city, Coro, has a population of 10,161, with 19,590 in the district of that name. The rest of the population is distributed throughout 10 other districts, of which two are equal in population to that of Coro, namely, Falcon and Bolivar; the capital of Falcon is Pueblo Nuevo, and that of Bolivar is San Luis. The other district capital towns are San Juan, Capatarida, La Vela, Pedregal, Churuguara, Coro, Cabure, Tucacas, and Puerto Cumarebo.

Coro is situated near the ocean, on the western side of the plain at the base of the peninsula of Paraguana, and is connected with the seaport of La Vela by a short railway. It was the first capital of colonial Venezuela and is one of the oldest towns in America. The elevation above sea level is only 53 feet. The mean annual temperature is 81° F. The death rate for the district is estimated at 31.6 per 1,000 inhabitants.

The State of Lara occupies the center of the commercial district under discussion, its area being 19,800 square kilometers, with an estimated population in December, 1917, of 233,152, making this State the most populous in the country, the next being that of Guarico, with 220,488 (included in the Caracas commercial district). The density of population per square kilometer in Lara is 11.7. The capital city, Barquisimeto, located on the plateau near the eastern boundary of the State, has a population of 27,069. The elevation above sea level is 1,868 feet. The mean annual temperature is 78° F. The death rate of the district is estimated at 35.1 per 1,000 inhabitants. The Barquisimeto district has a population of 41,321, and there are six other districts, the capital towns of which are Cabudare, Duaca, Quibor, Tocuyo, Carora, and Siquisique. The two districts of Siquisique and Tocuyo have each a population equal to that of the Barquisimeto district.

The State of Portuguesa, with an area of 15,200 square kilometers, had an estimated population in December, 1917, of 114,496, giving a density of 7.6 per square kilometer. The capital city, Guanare, has a population of 9,051, with a total of 30,008 in the district of the same name surrounding the town. There are seven other districts, the capital towns of which are Acarigua, Araure, Piritu, Guanarito, Ospino, Biscucuy, and Villa Bruzual, the number of inhabitants being about evenly divided, with the exception of the capital district named.

Guanare is situated on a fairly level plateau or bench land lying along the eastern slopes of the Andes, this part of the western range running into the Montana de Altar in the State of Cojedes. The elevation above sea level is 636 feet. The mean annual temperature is 83.5° F. The average annual death rate for the district is estimated at 19.3 per 1,000 inhabitants.

The State of Yaracuy, with a total area of 7,100 square kilometers, had an estimated population of 102,351 in December, 1917, or a density of 14.5 per square kilometer. The capital city, San Felipe, has a population of 10,817, with a total of 17,959 in the district of the same name. There are five other districts in the State, of which the capitals are the towns of Chivacoa, Nirgua, Aroa (Guama), Urachiche, and Yaritagua. Nirgua is the largest district, having 28,708 people.

The capital, San Felipe, is situated at the head of the Yaracuy River Valley, the elevation being 808 feet above sea level. The mean annual temperature is 80° F. The average annual death rate of the district per 1,000 inhabitants is estimated at 33.9.

The State of Zámora, with a total area of 35,200 square kilometers, had an estimated population in December, 1917, of 75,329, giving a density of only 2.1 per square kilometer. The capital city, Barinas, has 5,354 people, with a total of 9,146 in the district of the same

name. There are six other districts in the State, of which three, Obispos, Rojas, and Sosa, have a population of 10,000 each, in round numbers. The capital towns of the districts are Barinas, Arismendi, Barinitas, Obispos, Ciudad Bolivia, Libertad, and Nutrias.

Barinas is situated near the headwaters of the River Santo Domingo, one of the smaller affluents of the Apure which have their source in the eastern slopes of the western Andes. The elevation is only 594 feet above sea level. The mean annual temperature is 82° F. The estimated average death rate for the district is 14.2 per 1,000 inhabitants.

The population of Venezuela is not increasing to any great extent, the average increase shown being only seven-tenths of 1 per cent for the entire country. Emigration just about equals the number of people entering the country. The State of Lara, in the Puerto Cabello and Valencia district, shows the greatest percentage of increase; the census of 1891 gave this State only 189,000 people, as compared with 233,152 in 1917.

CITIES AND TOWNS—COMMERCIAL DISTRIBUTION AND TRADE ROUTES.

VALENCIA.

Valencia, the capital of the State of Carabobo, is the second city in size of the Republic of Venezuela and the most important manufacturing center, since the largest cotton mills are located there. It is also the center of the most developed and extensive agricultural region of the country. It was at one time the most important commercial center of Venezuela. The construction of the Great Railway of Venezuela between the city and Caracas, followed by the construction of the Puerto Cabello & Valencia Railway from the port of Puerto Cabello, made great changes in the major trade routes and commercial distribution of the district. Formerly the products of the State of Aragua and those of the western portion of Guarico passed through Valencia, but they are now carried eastward to Caracas by the railway, and the headquarters of the large importing wholesale houses have been changed from Valencia to Caracas and to Puerto Cabello. The city formerly supplied merchandise as far east as Maracay, as far south as the Orinoco, southwest to the Apure River and the Andes, and west and northwest, including both San Felipe and Barquisimeto. At present Valencia itself is commercially tributary to Caracas and Puerto Cabello. Many old Valencia families have moved to Caracas in recent years and established themselves there while still retaining their land interests in and about the capital of Carabobo. Many large two and three story commercial buildings, formerly used as wholesale warehouses and stores, and numbers of beautiful villas in the outskirts of the city attest its former commercial importance.

The trade to and from Barquisimeto and San Felipe is now carried to the coast by the Bolivar Railway, making those centers commercially tributary to Puerto Cabello. Only the industry of the inhabitants and the initiative of several industrial establishments have saved Valencia from decay.

Valencia was founded in 1555 by Alonzo Diaz Moreno, being 12 years older than Caracas. Its location is inland from the coast range

in the heart of the Lake Valencia Basin, the lake being to the east of the city. Although the elevation is 1,577 feet above sea level, the district is very hot and also dry during the dry season of the year. Tropical diseases are prevalent, and frequently veritable epidemics of malarial fever incapacitate as many as 20 per cent of the people during the season following the rains. The country surrounding the town is entirely level; the foothills of the coast range are 10 miles to the north, and the country to the south and southwest merges into the great plains. The rail distance from the Caribbean Sea at Puerto Cabello is 54 kilometers (1 kilometer=0.62 mile), and the pass over the mountains is 595 meters (1 meter=3.28 feet).

The city is well laid out in square blocks, the main avenues being Camoruco and Occidente, both paved with concrete and served by an electric street railway 4.5 kilometers long, with a cross-town line under construction, 1.6 kilometers in length. Camoruco Avenue is the principal residence section, and the construction of new houses is very active at present.

Electric lights are provided by two competing companies, the rates now being the lowest in Venezuela, namely, 20 cents per month per light of 25 watts, the average rate for the towns and cities of the country being 5 bolivars per light, or about 97 cents United States currency per month. The Valencia Electric Co. (Electricidad de Valencia) has a capital of 1,400,000 bolivars (\$270,200), divided into shares of 1,000 bolivars (\$193) each. The other electric company has a capital of 800,000 bolivars (\$154,400), divided into shares of 100 bolivars (\$19.30) each. This latter company had never paid an adequate dividend to the stockholders until the majority of the stock was purchased by the Branger interests, successful and wealthy cotton-mill operators of Valencia, who now pay a small return on the investment. The Electric Railway of Valencia is incorporated with a capital of 500,000 bolivars (\$96,500), divided into shares of 100 bolivars (\$19.30) each. Stock in the three companies was quoted on the Caracas market in December, 1920, as follows: Valencia Electric Co., 115 per cent, showing a premium of 15 per cent above par; "La Cumaca," formerly at 75 per cent, or 25 per cent below par, quoted at par value. The street railway company is controlled by the Stelling interests, and the stock is not quoted on the Caracas market, none being offered to the public for sale. The line has now six cars in operation.

Valencia has long-distance telephone communication with Caracas, Puerto Cabello, Tocuyito, La Laguna, Guigue, Guataparo, La Sierra, and points in the Caracas district reached by the Caracas system, such as La Guaira, Petare, etc. The National Telegraph System reaches all the other important points of the country from Valencia.

The Puerto Cabello-Valencia Railway runs two trains daily between the city and the port, leaving Valencia at 8.30 a. m. and 3.30 p. m., the latter train making through connections for Puerto Cabello with the express train over the "German railway" from Caracas. The running time is 2½ hours. Trains leave the port for Valencia at the same hours, passing en route. The Great Railway of Venezuela (called the "German railway") operates a fast train each way between Valencia and Caracas daily, the running time being 7½ hours. Connections are made at Caracas for La Guaira,

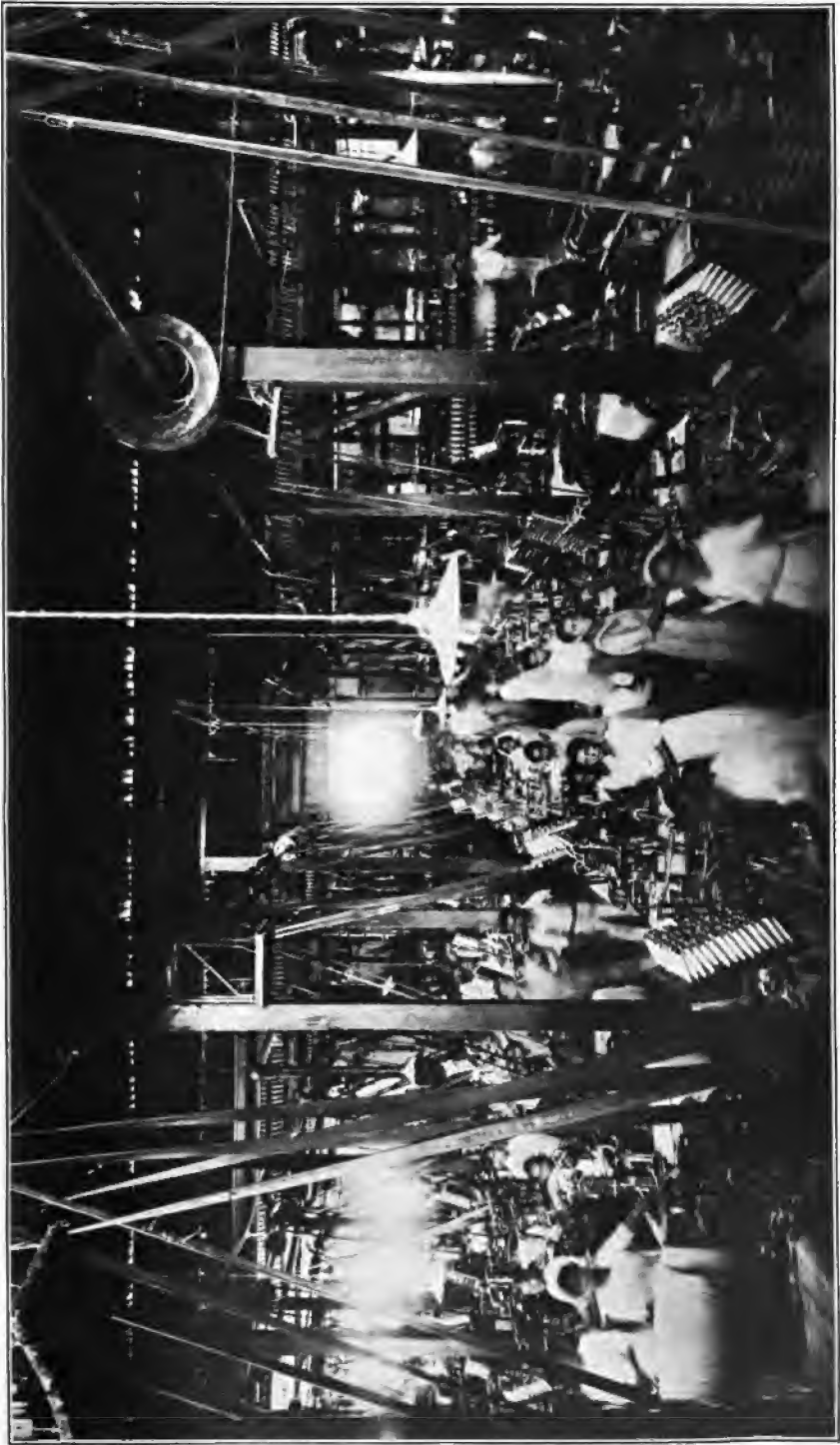


FIG. 15.—"TELARES" (TEXTILE MILL) IN VALENCIA.



FIG. 16.—INTERIOR OF PACKING HOUSE, PUERTO CABELLO.

the time between Caracas and Puerto Cabello and between Valencia and La Guaira being the same, namely, 10 hours of actual rail travel.

Hotel accommodations in Valencia are poor and inadequate. The principal hotel, the Universal, has about 20 rooms, but it is located in an old building and the food and accommodations leave much to be desired. There are a few pensions, but these also have their drawbacks for the average traveler. There are two clubs that are patronized by the business people of the place and are open to strangers upon introduction by members. Amusements are represented by two motion-picture companies, one of which uses the old bull ring. A new and more elaborate bull ring is being erected by the Branger interests and will also be equipped for motion-picture exhibitions at night. There are four small public parks within the city and also the gardens surrounding the railway stations.

In 1677 Valencia was attacked and taken by French pirates, who had already taken and sacked Puerto Cabello, partly destroying both towns. Near Valencia were fought the two great battles of the wars for the independence of Venezuela against the royalists of Spain. In the first battle of Carabobo in 1814, the Liberator, Simón Bolívar, was unsuccessful, but the second battle of Carabobo on the same field in 1821 was the decisive encounter which liberated the country from the domination of Spain.

Valencia has twice been the capital of Venezuela. The first Congress of the new Republic was in session in the city when it was partly destroyed by the earthquake of March 26, 1812. After the dissolution of the Great Colombia, of which Venezuela and Ecuador formed a part together with Colombia, it was the scene of the Constituent Congress of 1830. Again in 1856 the city was the meeting place of the celebrated national convention following the revolution of March, and it also served the same purpose in 1870 after the triumph of the revolution of that year.

MONTALBAN.

Twenty-three miles west of Valencia is the town of Montalban, higher up in the hills and with a population of nearly 9,000 people, who contribute to the commerce of Valencia, the principal industry being the cultivation of coffee on the slopes of the surrounding hills. The region is mineralized, and there are many rumors of old Spanish mines in the vicinity, though no deposits are worked at present. Montalban is on the highway from Valencia to Barquisimeto and San Felipe, via Nirgua.

NIRGUA.

Nirgua lies halfway between Valencia and Barquisimeto in the State of Yaracuy, but south of the watershed, at the western extremity of the Coast Range, on the alluvial plain of the River Buria. The town was founded in 1628 by the Spaniards, who worked copper mines in the vicinity. The population is about 4,000, commercially tributary to Valencia and Puerto Cabello. Merchandise is handled by small two-wheeled mule carts from Valencia. The principal export products are coffee and tobacco. There are said to be large deposits of sulphur in the vicinity, and a small copper mine is worked at present by the Buria Mining Co., composed of local merchants.

YARITAGUA.

Twenty miles farther along the highway toward Barquisimeto lies the town of Yaritagua, which, with the exception of Nirgua and San Felipe, is the only other town of importance in the State of Yaracuy. The place is tributary commercially to Barquisimeto and is supplied at wholesale from Puerto Cabello. The district is famous for its production of good tobacco, which is shipped to the cigarette factories of Caracas.

SAN FELIPE.

The capital of the State, San Felipe—connected with the port of Tucacas by a branch of the Bolivar Railway, via Palma Sola, and also with Puerto Cabello by a highway, over which a great deal of the present traffic passes—is situated near the headwaters of the River Yaracuy and is surrounded by a series of rich agricultural and pastoral valleys, on the sides of which coffee and cacao are produced. The town and district are tributary commercially to Puerto Cabello.

GUIGUE.

The small town of Guigue, on the southern shore of Lake Valencia, is the capital of the Gomez district, and is connected with the "German railway" by a short line 4.81 kilometers in length (1 kilometer = 0.62 mile) from the town down the Guigue River to the lake, whence traffic is carried across the lake to connect with the railway at a point between Mariara and La Cabrera. There is also a road which runs from Valencia around the lake, coming out at Maracay. The region is one of cotton fields, sugar estates, and cattle pastures. The inhabitants number some 4,000.

TOWNS EAST OF VALENCIA.

Tributary to Valencia, but supplied from Caracas and Puerto Cabello, are also the agricultural towns along the railway between Valencia and Maracay, the latter being included in the Caracas district commercially, though the Puerto Cabello merchants compete for the trade. These are Guacara, San Joaquin, Mariara, and La Cabrera.

TOWNS IN STATE OF COJEDES.

South of Valencia, through which their traffic passes, are the towns of San Carlos, Tinaco, Tinaquillo, El Baul, and Pao, in the State of Cojedes, lying entirely within the area of the great plains of Venezuela. The region formerly was devoted to cattle raising exclusively, but in recent times cotton and rice cultivation have become important. Tinaquillo and Tinaco are on the recently repaired and improved wagon road leading from Valencia to San Carlos, which forms an important link in the Great Western Highway of Venezuela now under construction to the Colombian border via Guanare and Barinas. All along the road are cattle pastures of artificial grasses and evidences of an increasing cultivation of cotton and rice.

East of San Carlos lies the old town of Pao de San Juan Bautista, the center of the most populous district of the State of Cojedes, the wealth of the people being represented principally in cattle. A few

years ago, what was said to have been a rich deposit of copper ore was opened up near this place, having, in colonial times, been worked with profit by the Spaniards. Communication is by trail with San Carlos, Tinaco, and Tinaquillo and thence to Valencia. The River Pao flows to join the Portuguesa below the town of El Baul, which is reached by small steamers coming up the Orinoco and Apure rivers during the height of the rainy season. The regions of the rivers that drain southward into the Apure contain many areas subject to overflow during the rainy season, the higher mesas and plateaus appearing as islands. During the winter months the llanos suffer from lack of water and are very hot and unhealthful.

GUANARE AND BARINAS.

In the State of Portuguesa the principal town is Guanare, the capital. It is an ancient Spanish colonial town, founded by Francisco de Leon in 1593. Besides the usual live stock, coffee and cacao are grown in the neighborhood and exported via Bocono and Trujillo, to Maracaibo. Barinas, farther to the southwest, was formerly famous for its tobacco. Communication is down the Santo Domingo River during the rainy season, to connect with navigation on the Upper Apure at Puerto Nutrias. In the dry season traffic crosses the range to Merida.

The western part of Venezuela was settled by the Spaniards earlier than the east, and the old towns of Guanare and Barinas were situated at the crossing of many routes, to and from the northern coast, the Apure and Orinoco, and the western side of the Andes. Many old and fine buildings indicate a former prosperity. The construction of the Great Western Highway, on which the Government is now expending great energy, will help both places. At present, commerce is principally with San Fernando de Apure and Ciudad Bolivar during the season of high water in the rivers, because freight is cheaper by this longer route than by pack animal over the range to the west or across the great llanos to Valencia or Barquisimeto.

The river port for Guanare is Puerto Guerrilandia, 15 miles south of the town on the Guanare River.

The port of Puerto Nutrias, on the Apure River, is the point of river shipment for both Barinas and Libertad, in the State of Zamora. The town, like Libertad, has about 3,000 inhabitants and exports hides, deerskins, some tobacco, and feathers of the "garza," or egret crane.

BARQUISIMETO.

Barquisimeto, capital of the State of Lara, is situated at the northern edge of the plain which extends southwest to Tocuyo. It is the center for the commerce of the State, as well as for the region of the northern Andes. Communication is by means of the Bolivar Railway to the port of Tucacas and thence to Puerto Cabello by launch twice a week. It has a wagon road to the port and also to Valencia, via Yaritagua and Nirgua. The town is an old one, having been founded in 1552. Both Tocuyo and Carora are tributary to Barquisimeto. Tocuyo is even older than the capital, and is well located on the right bank of the River Tocuyo, which is navigable for canoes

up as far as Siquisique, north of Carora. Carora has some fine grazing land in the district, and both towns are higher in elevation than Barquisimeto and therefore more healthful. In Gen. Castro's time a considerable sum was spent on the construction of a cart road from Barquisimeto via Carora to San Timoteo on Lake Maracaibo, but the route soon fell into disuse because the easiest route was to Barquisimeto and not over the broken range of hills to the west through more than 100 miles of undeveloped country. From Siquisique several old mule trails cross the range of hills to the towns in the State of Falcon, to the north. The only town of any importance is San Luis, situated in the hills on the north side of which begins the coastal plain, with its dry climate and cactus vegetation, being a repetition of the Barquisimeto area.

CORO AND CAPATARIDA.

Coro, now the capital of the State of Falcon, was the first capital of Venezuela under Spanish colonial rule. Its port is La Vela de Coro, with which it is connected by a narrow-gauge railway 13.3 kilometers (1 kilometer=0.62 mile) in length, trade being with the Dutch island of Curaçao. The principal industry of the region is goat raising, the animals being bred for their skins. The region is an arid plateau or high coastal plain, very hot and dry. There are salt deposits and coal mines operated by the Government in the vicinity.

The small coast town of Capatarida grows excellent tobacco, which is sent to Curaçao, via Coro. American and British oil companies have recently taken up oil-land concessions throughout this coastal region and are exploring for petroleum both west and east of Coro.

PUERTO CABELLO.

Situated about 100 miles by sea west of La Guaira, the harbor of Puerto Cabello is the best in Venezuela, and in colonial times this was the chief port of the country. The protected area of the harbor is small but easily accessible to the largest vessels calling at Venezuelan ports. Through the port are exported most of the products of the States of Carabobo, Yaracuy, Cojedes, and northern Portuguesa. The establishment of the Venezuelan Meat Products Syndicate packing plant in 1913 gave the port an additional importance as a beef-shipping point, the beef cattle being driven in overland from the holding pastures in and around Valencia and Maracay, after originating in the plains farther to the south and southwest.

The town is located at the foot of the mountains of the Coast Range, the outlet inland being by way of the small river gorge through which the Puerto Cabello & Valencia Railway and the cart road find their way to the interior region of Valencia. From the land side on the east there is a series of coral reefs forming a curved barrier to the north and then west, terminating in a sort of island upon which is located the old fort and which forms the sea protection for the harbor. The entrance to the harbor runs nearly east and west. The port has about 15,000 people engaged in shipping work and employed in the national dry dock and shops of the Government. Good agricultural land does not exist in any great area along the coast until the district of Ocumare is reached, some 20 miles to the

east, though the sides of the small valleys of the Coast Range are planted to coffee and cacao in many places.

Puerto Cabello ranks third in importance among Venezuelan ports of export and import, being next to Maracaibo. There is a good wharf owned and operated by the Government, which charges lower rates than those of the La Guaira Harbor Corporation, a British company; this fact causes the port to have a considerable coastwise traffic, and many exports originating both east and west along the coast are credited to Puerto Cabello. The coastwise trade, both incoming and outgoing, amounted in 1919 to 49,687 metric tons (1 metric ton=2,205 pounds).

Puerto Cabello has under its customs jurisdiction the coasting ports of Tucacas, Chichiriviche, and Ocumare de la Costa, Tucacas being a port of export only, to facilitate the movement of copper ore and matte from the mines of Aroa.

Twenty thousand tons of shipping can be moored at the wharf at Puerto Cabello. The imports in 1919 amounted to 20.7 per cent by weight and 11.8 per cent by value of those for all Venezuela, while the exports amounted to 18.9 per cent by weight and 32.1 per cent by value. Puerto Cabello ranks first as a port of export for hides and skins, second for coffee, and third for cacao. Its coasting trade amounted in 1919 to approximately 12 per cent of that for the entire country.

Following are the steamship companies whose vessels come to Puerto Cabello: Red "D" Line (from New York); New Orleans & South American Steamship Co. (W. R. Grace & Co., from New Orleans); Caribbean Steamship Co. (from New York); Harrison Line (from Liverpool); Leyland Line (from Liverpool); Compagnie Générale Transatlantique (from Havre); Compañía Trasatlántica Española (from Barcelona); La Veloce (from Genoa); Royal Dutch West India Mail (from Amsterdam); Compañía Venezolana de Navegación (Venezuelan coastwise service to all domestic ports).

Two 30,000-gallon fuel-oil tanks have been erected by the Caribbean Petroleum Co. to supply the Bolivar Railway and the rack-rail section of the Puerto Cabello and Valencia Railway with fuel oil and also for local use.

Additional importance is given the port by the establishment of the Dique y Astillero Nacional (National Dry Dock and Navy Yard), which has two floating docks in operation for the repair of coasting vessels and small steamers, a large machine shop, and building facilities for small vessels.

[In connection with this report there was submitted a very detailed account of conditions at the port of Puerto Cabello, containing full data regarding anchorage, pilotage, wharves, warehouses, customs duties and regulations, water, fuel, drydocking, fines, formalities to be observed by masters, stevedoring, and other matters pertaining to shipping. This is available for loan to interested persons, who may obtain it by applying to the Bureau of Foreign and Domestic Commerce, mentioning file No. 46318.]

TUCACAS AND CHICHIRIVICHE.

The port of Tucacas is the terminus of the Bolivar Railway, which connects San Felipe and Barquisimeto with the sea. Its chief importance lies in the exports of copper ore and matte from the mines of the South American Copper Syndicate at Aroa and in its traffic

in the products and imports of the Barquisimeto region. The copper mines of Aroa were long worked by the Spaniards in colonial times and formerly belonged to the family of Simón Bolívar, the Liberator of Venezuela, Colombia, and Ecuador. Bolívar sold them in 1812 to the English company for £40,000 to aid him in prosecuting the war of independence against the royalist forces of Spain. In 1891 the mines shipped 38,000 tons of copper regulus, but the product decreased to 4,950 tons in 1909 on account of low prices for copper. The narrow-gauge railway, now known as the Bolívar Railway, was the first line to be constructed in Venezuela. It was primarily designed to serve the copper mines; construction was started in 1873 and pushed as far as Aroa, and the line was subsequently continued to Barquisimeto, with a later branch to San Felipe.

The mining company maintains ore breakers at Tucacas from which the stored ore and matte is transferred by means of lighters to steamers lying in the open roadstead. The town itself is small and devoid of interest or comfort for travelers.

Administration of the port is under the jurisdiction of the Puerto Cabello customhouse, it being a port of export only for the products of the mines.

A little farther along the coast to the west is the small port of Chichiriviche, near the mouth of the Tocuyo River. There are no port works or even a wharf, the chief importance lying in the fishing banks in the neighborhood, from which turtles, a variety of small oysters, and small supplies of dried fish are shipped to Puerto Cabello for the interior market (principally in Valencia), and the shipments of lumber brought down the Tocuyo River during the wet season and transferred to Puerto Cabello for the Valencia and Caracas markets.

In 1920 this small port of Chichiriviche became the shipping base of the North Venezuelan Petroleum Co., a British concern owning oil land concessions along the coast to the east, the machinery and supplies for road building and well drilling being unloaded here from Puerto Cabello. The initial effort of the company is in road building for a distance of more than 60 miles through the low, swampy country as far as the sandy hills that are encountered over the last 20 miles on the route to the drilling site selected, which is at an elevation of about 200 feet above sea level and back from the coast. About 100 men were being employed in this work. The rains in this section of the coast do not begin until November and last until late in February, during which time operations have to be practically suspended by the company. Most of the country is heavily wooded, except near the coast, where there are many areas of lowlands partly inundated by the sea, forming marshy ground very difficult of passage for heavy traffic.

Communication with Tucacas from Puerto Cabello is by the launch of the Bolívar Railway, which leaves Puerto Cabello on Wednesdays and Saturdays at 2 p. m. The distance by water is 29 miles. Travelers are forced to spend the night in Tucacas and take the train the following day for Barquisimeto and way points, or for San Felipe. If the trip is made on Saturday, Sunday has to be spent at the port, as the railway does not run a train on Sunday.

Most, or nearly all, of the products of the Barquisimeto region—coffee, cacao, and hides and skins—pass out through Tucacas to

Puerto Cabello, where the Barquisimeto merchants buy their supplies of merchandise and dispose of their collections of export products. Recently, Barquisimeto merchants have also been buying at wholesale from agencies of foreign export commission houses established in Caracas and covering this territory with salesmen who make their trips periodically by automobile.

Goods brought into Tucacas, by coastwise traffic, during the year 1919 amounted to 8,463 metric tons (1 metric ton=2,205 pounds), valued at 22,867,974 bolivars (\$4,413,519).

LA VELA DE CORO.

The port of La Vela de Coro is connected with Coro, the capital of the State of Falcon, by a short, narrow-gauge line built across the base of the peninsula of Paraguana in 1893 and now owned and operated by the Venezuelan Government. The port has a wooden pile pier 75 meters (1 meter=3.28 feet) in length and allowing sufficient depth of water to take small coasting steamers alongside in good weather. Cumarebo, the small port to the east, also has a small landing pier for coastwise schooners and sloops, as has Capatarida, west of Coro, but only La Vela is a port of call for the Venezuelan Coastwise Steamer Line.

During the year 1919, La Vela exported to Curaçao 5,097 metric tons (1 metric ton=2,205 pounds), valued at 3,378,487 bolivars (\$652,048), consisting principally of goatskins, divi-divi pods, and fertilizer. A total of 12,663 tons of goat guano were shipped direct to the United States during that year. Corn, lard, beans, salt meats, and other foodstuffs, including live beef cattle, are also exported to the Dutch West Indies.

The total imports in 1919 amounted to 234 metric tons, valued at 702,741 bolivars (\$135,629), of which goods to the value of 203,243 bolivars (\$39,226) came from Curaçao, 354,096 bolivars (\$68,341) from the United States, and 140,218 bolivars (\$27,062) from Great Britain.

The chief item of export is goatskins, of which about 600 tons are exported annually, going chiefly to Curaçao. The region's total production of skins is much more than this amount, but the rest is transferred by coastwise trade to Puerto Cabello.

For several years past the Coro region has produced for export to the United States approximately 6,500 tons of goat manure per annum, but recent reports indicate that the available supply is rapidly diminishing, although the low export price for skins will have the effect of increasing the number of animals in the region for some time to come—herders claiming that, at present prices, it no longer pays to kill the male goats for their skins.

AGRICULTURE.

AREA OF CULTIVATION.

The Valencia region has already been described as the center of the greatest agricultural development in Venezuela. The agricultural lands surround Lake Valencia, with the largest areas of level tillable lands lying east and west of the lake—Maracay and Valencia—and the smallest areas actually developed being along the

southern edge of the lake. Once out of the level alluvial lands of the old lake basin of the Valencia district proper, one finds the next permanent cultivations down toward the sea, consisting of coffee plantations on the hillsides on both sides of the river canyon (or narrow valley) through which the railway passes to reach Puerto Cabello. From here cultivated areas occur to the east and west, along the sea side of the coast range of mountains, passing beyond Ocumare de la Costa to the east and reaching on the west as far as the mouth of the Yaracuy River. Farther to the west in the area surrounding the port of Tucacas, the terminus of the Bolivar Railway, there is an area more or less permanently planted to corn, beans, and some cotton; there are occasional small plantations of coconuts along the immediate coast, but not in sufficient quantity to permit of exportation except for occasional small cargoes to Curaçao and Aruba in the West Indies.

Proceeding to the westward, one finds the next cultivated area around the mouth of the Tocuyo River, where corn, beans, and tobacco are grown, but in a more or less desultory manner by the sparse population. In the great region of the interior of the State of Falcon, to the west of the Tocuyo River Valley there are intermediate areas under cultivation; coffee and cacao are raised farther inland along the higher hills of the range, near the villages of Jacura, Carorita, Colina, San Pedro, Agua Larga, San Luis, and Pedregal.

Down toward the coast in the region of Coro there are three areas cultivated in corn and beans, the first in and around the village of Cumarero and extending inland as far as La Soledad; the second lying between Coro and Cumarero; and the third extending inland from Coro. These areas produce sufficient corn, beans, and tobacco for local consumption and for a considerable export of corn to Curaçao and other islands of the Dutch West Indies. All along the coast to the west of Coro and throughout the peninsula of Paraguaná, population is lacking except for a few small villages engaged in goat farming on a small scale, and the country is dry and arid, vegetation being limited to the divi-divi tree (of commercial value), cacti, scrubs, and the like.

Inland, Carora, Siquisique, and San Miguel, lying along the Tocuyo River Valley at a higher elevation than the lands farther toward the coast, have permanent areas in coffee, cacao, and cattle pastures, and seasonal farming of corn and beans, but the latter products are not produced in sufficient quantities, and transportation to the coast is lacking to make them of value except for local consumption.

All along the line of the Bolivar Railway from Tucacas to Barquisimeto there are permanent areas in coffee, some cacao, and, in the river flats, tobacco.

A large area of good lands extends along the line between Barquisimeto and San Felipe, via Yaritagua and Chivacoa, the region producing the usual coffee, cacao, corn, beans, and tobacco, as well as considerable sugar cane.

Farther east again, toward Valencia, there is another area, circular in shape and reaching south as far as Tucuragua (north of San Carlos), north as far as the edge of the range back of Montalban, east as far as Bejuma, and west as far as the village of Nirgua.

San Carlos, Tinaco, Tinaquillo, and Pao have large areas under artificial pasture for cattle, the fields being fenced and planted to either Para or guinea grasses; the lands so used are increasing annually and are valuable principally in affording holding pastures for beef cattle brought in by easy stages toward the coast for eventual marketing in the Puerto Cabello packing house or in Caracas.

The last-mentioned region is also progressing rapidly in the cultivation of cotton and rice. The acreage planted to these two staples was larger than ever before in 1920, the cultivation being stimulated by the high prices obtained during 1918 and 1919.

Far to the southwest, Guanare and Barinas produce coffee and tobacco, the former product passing over the Andes to the Maracaibo market and the latter proceeding down the rivers to an eventual market in Ciudad Bolivar.

At El Baul and Calabozo, in the heart of the great llanos, there are small areas devoted to corn and beans, principally for the local population, which is sparse. Transportation facilities are lacking in this region.

The exportable products of the Puerto Cabello and Valencia commercial district are coffee, cacao, and tobacco, on a permanent basis, while corn and beans were exported in 1918 and 1919 during the period of extraordinary high prices, corn going even to the United States and beans to France during the war. Tobacco and cotton are grown for the domestic market, the cotton mills of Valencia and Caracas taking the crop.

In summing up the agricultural possibilities of the various regions mentioned above, the two outstanding features are: First, the tropical and semitropical conditions of the climate, with the prevailing lack of sufficient rain throughout the western portion along the dry plateau of the coast; and, second, the prevailing lack of labor for field work. There is not the population to furnish agricultural laborers in sufficient numbers to provide for any great increase in production.

LABOR CONDITIONS.

The people of the districts mentioned are, as has been said, of a mixed race, the Negro strain predominating along the coast and the Indian in the interior. The people of the small towns and villages of the interior and the bulk of the population in the larger towns—except in Valencia, where a great deal is being done for better living conditions among their operatives by the cotton factories established there—live in a quite primitive manner, and their daily diet leaves much to be desired. In the country and small villages the men seem to prefer tilling a small patch of ground in corn during the rainy season, planting a few stalks of bananas and plantains or a little sugar cane for the juice, and living "from hand to mouth," without ambition or prospect, though their labor can be counted on for the coffee picking during the harvest at the end of the year, coming as it does at the end of the corn and bean harvest period.

Wages for usual field work are 3 bolivars (\$0.58) per day of 10 hours, work being carried on under the ancient "tarea" or task system; each man is given a certain measured amount of work for the day, the task being known from immemorial custom of the coun-

try. After a man has finished his allotment for the day he can either take another or leave. For work in the oil fields, timber cutting, road work, and the like, as high as 5 or 6 bolivars (\$0.96 or \$1.16) per day are paid. As a rule, the men average about three days per week actually on the job, even in planting or harvest season, depending to a great extent upon their own small plantations for their families' livelihood.

In the coffee areas most of the plantations have been developed by a system whereby the owner of the land, usually a wealthy resident of Caracas, Valencia, or Barquisimeto, contracts with a man and his family to plant and care for a given area set out to coffee trees until full bearing, when the man can either deliver the green coffee to the plantation owner at so much per quintal, or sometimes sell the work performed at a fixed and prearranged valuation. The owner of the land in the meantime furnishes the man and his family with the necessities of life on account.

Corn, beans, and cotton are planted usually on the "mediero" system, according to which the "hacienda" (that is, the owner) furnishes the tillable field (or part of a field), fenced and ready for the plow, and also seed, implements, and draft animals, free to the tenant farmer, who is usually a man with several boys of working age, or with several male relatives who live with him during the planting and harvest seasons and share in the proceeds. The owner provides also means of sustenance during the crop season on account. The "mediero" receives one-half of the crop in the field at the end of the season, and is paid for assisting in the harvest of the owner's half at day wages or by contract if he performs, this part of the necessary crop labor. On account of his lack of transportation means, harvesting (that is, shelling) machinery, etc., the "mediero" usually sells his part of the crop to the owner, who possesses these necessary facilities, at a fixed price, either prearranged or corresponding to the market price obtainable at the time of the harvest and delivery.

By the end of 1920 there were some 40 American gasoline tractors in use in the Valencia district, and wealthy landowners were fully alive to the necessity of supplementing the efforts of available labor by the use of modern machinery.

EXCESS PRODUCTION AND FUTURE INCREASE.

Very large areas of corn and beans were planted during 1917 and 1918 at the suggestion of the Government, and enormous yields resulted during two good crop seasons, which not only met all the needs of local consumption, but left a considerable excess for export. A total of 195,937 bushels of corn were exported from Puerto Cabello to the United States during 1917, the value being \$208,525. In 1918, 67,398 bushels, valued at \$77,302, went to the United States, and there were other exports of cereals, in considerable quantities, to the islands of the West Indies, including Cuba, Porto Rico, and Trinidad.

Sugar also became a rather important item during the war years. In 1917 Puerto Cabello exported to the United States 6,480,276 pounds of sugar, valued at \$244,942, and also 691,139 pounds of brown sugar ("papelón"), valued at \$16,074. In 1918 exports of sugar to the United States totaled 7,705,748 pounds, valued at \$293,360, while

the brown sugar was worth \$23,482. Other agricultural products that went to the United States from Venezuela during these years were cottonseed and sesame-oil cakes, and castor-bean seed for castor-oil extraction.

During the year 1919 Puerto Cabello sent to the United States 5,434,889 pounds of sugar, valued at \$257,434, while in 1920 the amount was 7,854,928 pounds of "centrifugal" and 1,011,579 pounds of "raw," with a combined value of \$631,070. The sugar exports from Puerto Cabello to the United States and Great Britain came from the large sugar estates in the Valencia district proper. Great Britain received 1,571 metric tons (1 metric ton=2,205 pounds) of brown sugar from this port during the year 1919, and had previously taken large amounts during the war years of 1917 and 1918.

The largest sugar estate in the Valencia district (it being also the largest in Venezuela outside of the Lake Maracaibo sugar region) is that of "Tacarigua," near the town of Guigue, south of Lake Valencia. This estate had 1,500 hectares under cane in 1919 and produced 3,700,000 kilos (1 kilo=2.2046 pounds) of white sugar of 96 grades polarized. As in other sugar districts of the country, the industry was greatly stimulated by the high prices obtained during 1919 and a greatly increased acreage was planted to cane, the season being 14 months. It was hoped that the total production of "Tacarigua" would be 4,000,000 kilos in 1920.

It is calculated that each hectare (2.47 acres) produces 50 tons of raw sugar cane. From each ton it is estimated that 50 kilos of refined sugar is obtained, the production depending upon the type and condition of the machinery used.

In the Barquisimeto region there are 1,950 hectares, divided among four estates (the largest of which contains 800 hectares in cane), which produce a total of 3,500,000 kilos of sugar per annum.

It is also estimated that the total sugar production of the country is at present 26,515 tons of white sugar, of which the Puerto Cabello and Valencia districts produce 7,200 tons, which will be increased by 2,500 tons when various smaller "haciendas" now producing only brown sugar for domestic consumption shall have completed the installation of new machinery for the extraction of white sugar. The consumption of white sugar in Venezuela is possibly 6,000 tons, all of the rest being exported; but the "papelón," or brown-sugar cake of the country, is an article of staple diet for all classes of the people. The amount of white sugar for export will increase during the next few years on account of the stimulation of the industry, resulting in a greater acreage planted to cane and the changing of several small estates to the production of white sugar. The total increase in sugar production is estimated at about 15,000 tons for the entire country—principally in the Lake Maracaibo region. Taking account of the increased consumption of white sugar in the country, it is estimated that a total of possibly 35,000 tons will be available for export if prices remain attractive.

However, during 1917, 1918, and 1919 the demand for export had the effect of greatly increasing prices of articles for domestic consumption. These prices more than reflected values in the United States and worked a real hardship on the people; the exported amounts of lard, corn, beans, and sugar did not always represent

any real excess over and above domestic needs. Late in 1920 the sudden drop in sugar values left large amounts of sugar in the country, as it was very doubtful whether Venezuela could continue to export sugar with New York prices around 4½ cents per pound and still compete with the Cuban and Porto Rican production. The Puerto Cabello and Valencia district counted on an export of sugar to the United States of about \$500,000, based on 1919 prices.

Corn crops were very good for 1920, in anticipation of export trade, but prices prevailing in the United States would no longer permit exportation from Venezuela. However, the lack of sufficient rains during the growing season in the entire eastern part of the country, from Barcelona to the end of the peninsula of Paria, resulting in partial crop failure for that region, created an opportune demand for a large part of the Valencia district's crop of corn and beans, the two great staples of the people of the country.

One of the interesting developments brought about by the war in the export trade of Puerto Cabello was the increase in exports of foodstuffs to the islands of the West Indies, consisting principally of corn, beans, and lard, together with some coffee and cacao. Coffee sent to Curaçao was for transshipment to the United States. During the first half of 1918 this trade amounted to \$510,476, as compared with only \$39,481 for the same period of 1917, the difference being caused by two factors—(1) bad crops in the islands (especially those of the leeward group of the Dutch West Indies) and their inability to obtain the usual food supplies from the United States and Europe on account of the war restrictions on the export of foodstuffs from the belligerent countries, and (2) the preoccupation of the people of the islands with the production of sugar for export at high prices. Charter rates for the many small Venezuelan and Curaçao schooners handling this trade were very high—averaging, for Cuban ports, \$26 per ton—and vessel owners reaped a rich harvest.

The total production of corn in Venezuela is calculated at 22,000,000 hectoliters, or 62,400,000 bushels, and the domestic consumption of the country at 6,000,000 hectoliters, or 17,000,000 bushels, leaving an export surplus of approximately 16,000,000 hectoliters, or 45,400,000 bushels, based on the figures for 1918. The Valencia-Barquisimeto-La Vela de Coro districts produced about 21 per cent of this total of corn. La Vela de Coro exported 1,092,944 pounds of beans in 1917, valued at \$25,603, going principally to the West Indian islands and to France, though the United States received a small amount. During the same year this port exported 2,518,934 pounds of corn, valued at \$38,689.

METHODS OF CULTIVATION.

Corn and beans are planted between the rows of cotton in the Valencia district. Throughout Venezuela as a whole they are usually planted at the beginning of the rainy season (June in the Valencia and llanos regions, and November west of Puerto Cabello, along the lowlands of the coast) without even the use of plows, except in the small, rich river valleys near the largest towns. Draft animals are scarce, oxen being used because the native mules are too small and light for plow work. American and English plows are used. Areas that are not plowed are simply cleared of brush with the machete and the

seed planted by making a hole with a sharp stick. Cultivation is by means of the same machete used for chopping out the larger weeds from time to time during the growing season of the crop. On the larger "haciendas" in the region of Maracay and Valencia, and also more recently in that of Barquisimeto, gas tractors, gang plows, harrows, and other modern agricultural implements are appearing in increasing numbers, and the same is true of shelling and grain-cleaning machinery.

In the neighborhood of Valencia and throughout the Valencia district fields are well fenced and cared for, but outside of this favored region little care is taken and agricultural areas present a ragged, unkempt, and careless appearance. Barbed wire is used universally for fencing all over Venezuela.

COTTON.

This district is the largest cotton producer of Venezuela. Cotton has been grown in this region since a period before the American Civil War, and it was exported to Europe before the establishment of the first cotton mill in the country in 1858. In 1908 a total of 396,885 pounds was exported, going to France, Germany, and the Netherlands. Crops in more recent years have become too small for the requirements of the domestic mills, of which there are now five in the country, exclusive of the new factory at Cumana—two of the largest being located in Valencia. These mills operate about 19,000 spindles and 600 looms and consume approximately 6,250 bales of cotton annually, making grey goods, coarse, heavy-wearing cotton cloth for clothing, plain sheeting, and hosiery. In order to assist the cotton-manufacturing industry, the Government removed the 25 per cent surtax on imported cotton, the import tax now being only 3.43 cents per pound.

As in the case of all other crops in Venezuela, it is not possible to obtain accurate data on the actual acreage under cultivation on account of the reluctance of owners or planters to make a statement of their holdings and operations.

The domestic mills were very prosperous during the war, prices obtained for domestic production of cotton goods being based on the price of similar imported goods; and the production of raw cotton was also stimulated, the largest acreage being planted in 1920. In the States of Aragua and Carabobo, as well as some parts of Yaracuy and Cojedes, locusts caused great damage to crops during the period from 1912 to 1915. The Government has aided in cotton production by the distribution of seed and by experimental work. The States named above produce 54 per cent of the cotton produced in the country, as follows:

[Kilo=2.2046 pounds.]

Districts.	Percentage.	Total in kilos.
States of Aragua and Carabobo.....	54	1,077,300
States of Lara and Portuguesa.....	14	279,300
State of Zulia (Maracaibo region).....	18	359,100
Eastern States.....	14	279,300
Total.....		1,995,000

In 1919 a survey of the cotton situation showed an approximate total yield of 7,000,000 kilos (7,000 metric tons) in the seed. Two and three-quarters quintals (1 quintal=100 kilos) are required to produce 100 pounds of clean fiber. This represents an average of 28.5 per cent of the cotton in the seed, making the annual production of clean cotton equal to 1,995,000 kilos, or 1,995 metric tons. The annual production of the Valencia and Portuguesa districts has been as follows: Valencia district—1908, 254 metric tons; 1912, 3,002 tons; 1915, 1,130 tons; 1916, 1,223 tons; 1917, 1,931 tons. Portuguesa district—1916, 605 metric tons; 1917, 1,944 tons. These figures do not represent the entire production; they are for seed cotton. The climate and the soil are better suited to the growing of the upland varieties than the Sea Island or Egyptian. The Venezuelan staple is long and silky, being about $1\frac{1}{4}$ inches in length. The seed is sown at the same time as that of corn and beans, usually during the month of June or July, and the cotton is picked at the end of November or the beginning of December, according to the season and rainfall. The corn or beans planted between the rows pay for the expense of cultivation and harvesting, or at least of seeding and cultivation.

Prices paid for domestic cotton fluctuated during the past 10 years from 70 to 150 bolivars (\$13.50 to \$29) per 100 pounds. The high figure of 150 bolivars was paid during the last half of 1919, because of the high prices for cotton and cotton goods in the United States. The total production of 1,995,000 kilos in 1919 sold for an average price of 3.25 bolivars per kilo, or \$0.285 per pound, the total value being 6,483,750 bolivars (\$1,296,750), making this product next in importance to coffee and cacao for Venezuela. During the latter part of 1919 the drop in prices of imported cotton goods adversely affected the domestic mills; prices were reduced by 25 per cent at wholesale, and further reductions were predicted for the late winter and spring of 1921. The cotton crop of the Valencia, Aragua, and Portuguesa districts was the largest in the history of the country and more than enough to supply the demands of the domestic mills, judging from all reports. The mills were no longer being operated on full time, and the prices being offered for raw cotton were extremely low, being (in December, 1920) only 6 bolivars per "arroba" of 25 pounds, or 24 bolivars per 100 pounds of clean cotton fiber. This price is equal to 4.6 cents per pound. The Government took action in view of the plight of the planters and unofficially offered to pay 8 bolivars per "arroba" for the cotton. This price was later accepted by the mills of Valencia, and the planters admitted that they would not lose on their 1920 crop.

RICE.

Before the war all the rice consumed in Venezuela was imported from the United States, Germany, and other countries. Imports of rice in 1913 amounted to \$288,607, and in 1914 to \$396,906. In 1917 the country took rice valued at \$641,038, of which the United States furnished \$635,881. In 1918 the imported amount dropped to \$489,508, coming almost entirely from the United States, the actual volume being less than half of that in previous years, while the price had increased by about 100 per cent.

Since 1913 the consumption of rice in Venezuela has about doubled and the article has become an important food staple with the people

of the country. Puerto Cabello imported, in the high year of 1917, \$108,217 worth of rice, the amount being distributed to Valencia, Barquisimeto, etc.

The cultivation of rice has increased in the Valencia region, principally to the southwest in the neighborhood of Tinaquillo, Tinaco, and San Carlos and even farther south—the overflow lands of the edge of the llanos being used. There are enormous areas of good land suitable for rice growing in Venezuela and the industry promises to become an important one, as Venezuelan rice now supplies about one-half of the former total demand and the grain is of better quality than the “Siam Usual” and “Saigon” imported. By the end of 1920, after the sudden drop in prices of rice in the United States, native grain was competing on the market in Valencia, Puerto Cabello, and Caracas with the imported, selling around 9 cents per pound at wholesale at seaport or capital city. There are no means of accurately estimating the production of rice. Methods of cultivation and cleaning are very crude and primitive.

TOBACCO.

Tobacco was introduced by the Spaniards into Venezuela in early colonial times and was most successfully cultivated on a commercial scale near the towns of Capadare (west of Tucacas), Yaritagua (near Barquisimeto), and in the region of Barinas, though tobacco production from this last-named place has decreased in modern times on account of transportation difficulties—at the same time increasing in the eastern States of the country, notably around Maturin in the State of Monagas and near Cumana, in Sucre, where the fields are nearer to the coast.

The plant thrives in the deep, humid soils of the small valleys of the interior, and in modern times its cultivation has been very successful in the neighborhood of Quebrada Seca in the State of Aragua and around Guacara, near Valencia. There are several other tobacco-producing districts of less importance in the Valencia and Barquisimeto regions.

“Capadare,” as the grade is called that comes from the district of the same name, is of a better grade than the tobacco from Maturin and will hold its strength for three years or more after packing. The local grade called “Mirimire” is of still better quality, consisting of fine leaves of light color, and is known by foreign buyers as “Cover” and “Inner Cover.” The “Quebrada Seca” grades are used principally in making the cheaper grades of domestic cigars in Venezuela.

The total production of tobacco in Venezuela is estimated at around 4,000 tons annually, of which the commercial district now under discussion furnishes a total of about 1,350 tons—1,000 tons coming from Capadare alone, of which 700 tons are of first quality. The average prices from 1914 to 1920 for these grades have been: “Capadare”—First class, 2.60 bolivars (\$0.50 per kilo (1 kilo=2.2046 pounds); second class, 1.09 bolivars (\$0.21) per kilo. “Quebrada Seca”—First class, 1.75 bolivars (\$0.34) per kilo; second class, 1.09 bolivars (\$0.21) per kilo.

The total value of tobacco exported from Venezuela in 1917 amounted to \$45,741, and in 1918 exports reached the high figure

of nearly \$800,000, of which the Valencia and Capadare districts furnished about 25 per cent.

During the year 1919 Puerto Cabello shipped 18,884 kilos of leaf tobacco to the Netherlands.

COFFEE.

Taking the figure of 1,000,000 sacks as the average coffee yield of the country for export, one finds that the district ranks second in the production of this important article of export, its average total per annum being 300,000 sacks—200 less than the Maracaibo total and 100,000 more than that for the Caracas district.

The regions of production are found in the higher levels of the mountain ranges and hills, as follows: Along the coast range from Ocumare de la Costa and Puerto Cabello as far west as the mouth of the Tocuyo River; in the Las Trincheras district between Valencia and the port; between San Felipe and Barquisimeto on both sides of the valley of the Yaracuy River; in the hills around Montalban and Nirgua; in the regions of Tocuyo, Carora, and San Luis, the last-named place lying to the north in the Coast Range. Along the line of the Bolivar Railway there are also several coffee areas, principally in the neighborhood of the Aroa and Duaca. The regions of coffee production are scattered and usually suffer from the lack of transportation facilities.

In 1916 Puerto Cabello exported a total of 28,181,137 pounds of coffee, valued at \$2,935,011, of which the United States received only 3,137,473 pounds, valued at \$351,251. In 1917, 27,065,930 pounds were exported, of which the United States received 5,105,371 pounds, valued at \$463,556. In 1918, 22,020,000 pounds were exported, of which the United States received 6,775,300 pounds, valued at \$646,897. Coffee prices during the first half of 1918 were low, because of the level of New York quotations and the difficulties of shipping to Europe. Prior to the armistice in November, Puerto Cabello grades were quoted at an average price of 6.6 cents per pound and then gradually, with many local fluctuations, increased to the high figure of 26 cents per pound. To show the destination of Puerto Cabello shipments (which include those of the Barquisimeto region) during the second half of 1918, the following table is given:

Countries of destination.	Bags.	Pounds.	Values.
Curaçao.....	8,454	1,134,000	\$116,614
Italy.....	6,180	799,000	84,650
Spain.....	41,649	6,516,000	602,040
United States.....	27,705	3,704,500	408,027
Martinique.....	100	13,300	1,220
Total.....	84,088	12,166,800	1,212,551

During the first half of 1919 shipments of coffee were very heavy, consisting of the 1918-19 crop and quantities stored in the country for better prices during the war period. In the single month of January, 1919, 46,240 bags were shipped, of which the United States took 37,180 bags. The bulk of the 1919 shipments went to the United

States and to France. The movement for the entire calendar year 1919 is shown in the following table:

[Kilo=2.2046 pounds.]

Countries of destination.	Kilos.	Value.	
		Bolivars.	Dollars.
Cuba.....	52,931	87,688	16,924
Curaçao.....	1,146,331	1,867,224	360,374
France.....	11,379,133	24,196,495	4,669,924
Great Britain.....	961,681	1,804,614	348,291
Italy.....	81,300	148,500	28,660
Netherlands.....	2,374,050	6,860,125	1,324,004
Spain.....	4,430,416	9,304,400	1,795,749
United States.....	6,728,024	13,318,047	2,570,383
Other countries.....	64,483	133,324	25,732
Total.....	27,218,349	57,720,417	11,140,041

In 1919 the port of La Vela de Coro exported 51,454 kilos of coffee, to the value of 69,144 bolivars (\$13,345); it went principally to Curaçao and Trinidad for transshipment.

The crop in 1920, ready for first picking in December, was estimated to be 25 per cent less than normal, because the plantations on the lower levels of the ranges had not received sufficient rain during the season to mature the crop properly. Planters were also experiencing great difficulty in collecting sufficient labor to harvest the crop, by reason of the employment of most of the available men in the Government road-building program.

Prices received during 1919, which averaged well above 20 cents per pound for Venezuelan grades in New York, brought about the greatest influx of wealth ever experienced by the country and induced an era of prosperity and development which lasted until the latter months of 1920, when prices declined to about pre-war levels, Puerto Cabello grades being quoted in New York in December at 9½ to 12 cents per pound, or less than half the averages obtained during 1919.

CACAO.

The total production of cacao in Venezuela is about 10,000 tons, of which the Puerto Cabello district produces approximately one-third. The areas of production are about the same as those for coffee, but the cacao is on the lower levels of the mountains and hills, the average elevation of the plantation being around 3,000 feet. In 1917 the crop was 25 per cent below normal on account of late rains, and 25 to 30 per cent of the previous crop remained unsold because of the lack of ocean tonnage during the war years and the low prices prevailing. Official figures gave the valuation at 11.2 cents per pound for the first grade and 8.4 cents for the second grade. The better grade had always found a good market in France, but that market was cut off during the war to a very great extent.

Exports from the Puerto Cabello district in 1917 amounted to 6,288,558 pounds, valued at \$853,758. In 1918 the exports fell off, amounting to only 4,470,000 pounds, valued at \$441,160, of which the

United States received 3,745,258 pounds, valued at \$367,649. During the year 1919 (the most recent period for which statistics are available) Puerto Cabello's exports of cacao, by countries of destination, were as follows, according to Venezuelan Government statistics:

[Kilo=2.2046 pounds.]

Countries of destination.	Kilos.	Value.	
		Bolivars.	Dollars.
Curaçao.....	96,337	143,903	27,773
Great Britain.....	765,436	2,004,020	386,776
Netherlands.....	157,095	408,837	78,906
Spain.....	576,485	1,208,287	233,199
United States.....	1,248,006	2,894,024	558,547
Other countries.....	42,241	118,090	22,791
Total.....	2,885,600	6,777,161	1,307,992

The total exports of cacao from all Venezuela during the year 1919 amounted to 19,833,945 kilos, valued at 39,086,569 bolivars (\$7,543,708). This total included part of the old June-July, 1917, crop and the December, 1918, crop. None of the old crops had remained on hand in 1919 in the Puerto Cabello district.

It was hoped by growers that the drop in the price of sugar in 1920 would bring about an increased demand for cacao of the better grades in the countries manufacturing chocolate on a large scale.

The tendency for prices to decline still further and the influx of labor to the cities of the country, away from the land, preclude any great development of the cacao industry in Venezuela. Cacao requires more labor and care in the preparation of the bean than coffee, and, also, it can not be stored for any length of time in a hot, damp climate without risk of fermentation. Landowners with capital for development generally prefer coffee planting. The cacao trees are subject to the damage inflicted by the gray moth, and such is not the case with coffee plants.

OTHER AGRICULTURAL PRODUCTS.

During the war there was considerable interest in the production of the castor-oil bean for export, and 349 metric tons, valued at \$250,000, were exported to the United States in 1918. This plant does extraordinarily well in Venezuela, especially in the Valencia region, but the low prices now prevailing have caused this new branch of agriculture to be discontinued for the time being.

It is thought that greater attention to coconut planting in certain favored areas along the coast would produce good results. As it is to-day, the production does not meet the local demand for the raw nuts nor that of the trade of the Dutch islands of Curaçao, Bonaire, and Aruba. Little labor is required, but in spite of this fact (so necessary to be considered in Venezuela), no attempt has been made in the Puerto Cabello region to develop a coconut plantation on a large scale, the industry being limited to a few villages along the coast. Coconut production is better developed in the region of Cumana, far to the east.

Citrus fruits do extremely well in the Valencia region, which grows famous sweet oranges, but with the exception of a few small orchards developed by wealthy "hacienda" owners as a sort of hobby, there has been no commercial development for export, and the supply does not begin to take care of even the Caracas market.

Nearly all vegetables are grown, including very fine potatoes.

FOREST PRODUCTS.

With the exception of the divi-divi produced by the western part of the district, no forest products are produced or exported through the ports of Puerto Cabello or La Vela de Coro. In the far south-western region of the district, along the upper waters of the Apure River, rubber is collected, but not on a large scale, and the trade is with Ciudad Bolivar during the season of high water in the Orinoco and Apure Rivers.

Lumbering is negligible, being confined to quantities sufficient to supply the local demand and that of Valencia and Caracas. There are not enough accessible forest areas to permit the exportation of timber products on a large scale.

Many tanning materials are found throughout Venezuela, but the principal one is the divi-divi (*Cesalpinia coriaria Willd.*). The tree producing the pods that contain the tannin grows to a height of 20 to 30 feet and is indigenous to Venezuela, being found in the arid lands west of Puerto Cabello along the elevated plateau back from the sea.

The pods are about 3 inches long by $\frac{3}{4}$ inch broad and very thin and smooth, containing about 41 per cent tannin on an average analysis. The tannin is most abundant in the tissue of the pod, under the epidermis. There is little in the seeds. Formerly, the export trade was principally with Hamburg, the United States buying from Germany at wholesale to a great extent.

In 1917 Venezuela as a whole shipped to the United States (the country's principal customer for this product after the war closed the German market) 1,064,130 pounds of divi-divi, valued at \$30,489,¹ while in 1918 the amount was 1,914,486 pounds, valued at \$54,715. During 1917 the port of La Vela de Coro exported 5,022,154 pounds of divi-divi, valued at \$33,411, and in 1918 a total of 3,122,589 pounds, valued at \$22,570, most of which went to Curaçao for transshipment to the United States. Coro is the center of the trade in this product, which is gathered in the surrounding region.

MINING AND PETROLEUM.

COPPER.

The only important mining operations in the entire territory described in this chapter are those of the South American Copper Syndicate (Ltd.) at Aroa, in the State of Yaracuy, about halfway between Barquisimeto and the port of Tucacas, on the Bolivar Railway, which was originally built to serve these rich and extensive

¹ These values, for declared exports to the United States, are those of the American consulates. The values in the next sentence, for exports from La Vela to all countries, are those of the Venezuelan customs authorities.

deposits of copper ore, first worked by the Spaniards in colonial times. The original British company purchased them from Simón Bolívar, the Liberator, in 1812 for £40,000, Bolívar using the money to assist in financing his wars of independence against Spain. Between 1862 and 1880, after several prosperous periods, the mines reached their maximum output, during which period the railway was constructed. They were then idle for a period of about 15 years, after which they were reopened by the company now operating them. The company has experienced unusual prosperity during the war, shipping the entire product to the refineries of the United States, where all supplies and machinery are purchased.

In 1917 the output of copper matte and shipping ore amounted to 41,271 tons, the ore containing about 7 per cent copper.

The mines have been closed since the armistice, but the management is keeping the old workings under repair and accessible and is developing new ground in the mineralized area. A large radial drill outfit has also been ordered from the United States, with experts for its operation, and prospecting for new ore bodies will be done on a large scale. The old water-jacket furnace is antiquated and is to be remodeled and renewed on a larger scale. It is thought by experts that this property is one of the best copper deposits in South America.

The mines are situated at an elevation of 1,165 feet above sea level, the rail distance from Tucacas being 88½ kilometers (1 kilometer=0.62 mile). The original discovery was made in 1605. The deposits are in the valley of the Rio Aroa, a small stream forming part of the dividing line between the mountain ranges of Merida and Trujillo, of which the watercourses of the Rivers Yaracuy and Cojedes mark the great divide. The country rock is in general structure slate, in many places heavily impregnated with lime, there being mica and other accessory substances. The deposits of cupriferous ore are not encountered in vein formation but are really large irregular deposits of, as yet, unknown extensions. The richest ore found is that of copper pyrites, the ore being a combination of copper and iron sulphides called calcopyrites. An average assay made in 1891 gave the following result:

	Per cent.
Copper.....	9.5
Sulphur.....	32.0
Iron.....	35.0
Silica.....	10.0
Alumina.....	5.0
Lime.....	4.0
Other substances.....	4.5
	<hr/> 100.0

Other assays show the iron content to be as low as 29 per cent, that of metallic copper as high as 12 per cent, and sulphur as high as 40 per cent. Reduction has been in water-jacket furnaces producing copper regulus of 41 per cent copper, 29 per cent sulphur, and 22 per cent iron. In the mine workings many of the different combinations of copper ores are found also, such as the subsulphide of copper, copper sulphate, etc. About 15 per cent of the ore is selected and shipped directly to smelters—formerly going to Swansea, but latterly to the United States. The furnace capacity is 200 tons of

ore daily. The company has constructed ore bins for storing and loading into lighters at Tucacas for ocean transport by steamers.

There is another copper mine in the same neighborhood, near Aroa. The property is called "La Cumaragua," the company being capitalized at 1,500,000 bolivars (\$289,500). A short branch line has been constructed to connect the mine with the Bolivar Railway, and recent shipments of copper carbonate ore show from 9 to 29 per cent copper, 22 to 31 per cent iron, and 10 to 38 per cent silica. In this ore body there occur carbonates, oxides, and sulphides of copper, and the cost of 1 ton of ore from the mines, f. o. b. dock, New York, is estimated at 66.60 bolivars (\$12.85). The company has installed a 40-kilowatt electric generating plant operated by a Diesel oil motor, machine drills, and a Davis-Calix deep rock drill for prospecting.

Copper deposits have been known in this district since early times. The deposits of Nirgua are said to have run 38 per cent pure copper. Old copper mines were worked by the colonial Spaniards near Los Teques near Caracas, and at Chacao, south of Villa Cura in the direction of Pao, there are recent discoveries, said to be rich.

GOLD.

Gold was formerly mined on a small scale in the neighborhood of Montalban, just west of Valencia, according to colonial tradition, and rich specimens have recently been encountered as float, though their actual source is not known to-day. The average Venezuelan workman is not addicted to prospecting, as his Mexican cousin is, and Venezuelan territory has not been so thoroughly "surface prospected" as that of Mexico, where the ground has been well covered for years.

PETROLEUM.

Since 1912 the territory west of Puerto Cabello as far as Lake Maracaibo has been included in concessions given by the Government for oil exploration from time to time. Recently new contracts under the new petroleum legislation and former concessions have covered, all along the coast, the land held as public land and coming under the concessions and laws. The territory is being explored for favorable drilling locations by British and American oil companies, and there is a prospect of large development of this industry during the next two years. Conditions are difficult. Transportation has to be provided, roads constructed, camps established, etc. Labor is scarce, and many varieties of topographical and climatic conditions have to be met, from salt marshes along the coast to heavily timbered hilly areas farther inland, as well as long stretches of semiarid mesas where water is scarce. (See p. 92 for names of companies and details.)

COAL.

The only important mining activity in the district, other than the Aroa copper mines, is that of the coal mines near Coro, in the State of Falcon, owned and operated by the Government. During 1917 these mines produced 4,716 tons of the 20,164 tons of coal produced in the whole country. In 1916, 9,100 tons of coal were imported from abroad at Puerto Cabello for the railway and coastwise shipping use.

The most simple methods were being used in mining, and the mine product was hauled to the Coro and La Vela Railway in small two-wheeled carts for a distance of several miles. The maximum monthly production was 645 tons in September, 1917. There were no storage facilities or loading arrangements either in Coro or at the port of La Vela, and sailing lighters were used for loading the coal on vessels lying in the harbor. The price of this coal in 1917 was fixed by the Government at \$4.63 per ton to all Government departments using it, and \$7.72 per ton to private individuals and companies. At the beginning of 1917 there was a stock of 4,358 tons on hand, which was reduced to 60 tons by the end of the year. Sales of coal from La Vela increased from approximately 3,000 tons in 1915 to 9,000 in 1917. On account of the cost and difficulty in securing ocean transport during the war, there was an increasing demand for native coal in Venezuela, and the port of Willemstad, Curaçao, took increasing amounts; exports in 1917 to Curaçao from La Vela amounted to 1,970 tons, valued at \$8,940. Even since the war, with increasing amounts of American coal being received at Curaçao for coaling vessels, Coro coal is still being imported by the bunkering companies. During 1919, however, the shipments of coal from La Vela to Curaçao amounted to only 360 tons. The difficulty at La Vela is the lack of quick and cheap loading facilities for the dispatch of large tonnage, the coal at present being handled in small schooners entirely by hand at both ends.

The coal fields of the State of Falcon, which begin with the outcroppings on the coast at Sabanas Altas, Cumarebo, Tamataima, Aguide, Curamichate, etc., strike inland and cover a large area. The best-known deposits are those of Cumanichate and Aguide, owned by a private concern, and those of El Isiro, El Semeruco, El Hatillito, Angoleta, El Saladillo, and Aloncico, belonging to the National Government. Coal veins have also been discovered in many other parts of this State, such as that at El Montante (considered one of the best outcroppings but too far in the interior to be of commercial value at present), La Negrita, Cardon Grande, etc.; but there are no data to indicate the thickness or quality of the coal of these deposits or veins.

Only at El Isiro, situated 11 kilometers (1 kilometer=0.62 mile) south of the city of Coro, has this coal been exploited with any degree of activity and with modern equipment. Here are found three veins of coal, running approximately east and west in general direction, inclined from the north to south with a dip of 19 to 36 degrees. Farther south lie the outcroppings called La Negrita, Llano Colorado, Cardon Grande, and El Montante. These latter showings of coal have the peculiar feature of being inclined in the opposite direction from those at El Isiro, if one may judge from surface indications—leading to the belief that all are connected and lead to a so-called "coal basin" in the center.

The veins that are being worked have the following thickness: El Isiro, 0.50 to 0.55 meter (1 meter=3.28 feet); El Hatillito, 0.50 to 0.55 meter; angoleta, 0.40 to 0.50 meter; El Semeruco, 0.40 meter; El Saladillo, 0.50 to 0.60 meter; Alconico, 0.50 meter. The width of these veins is more or less uniform, but they run less in width than the Government properties of Barcelona (Naricual fields). It is said



FIG. 17.—UNITED STATES CONSULATE, PUERTO CABELLO.

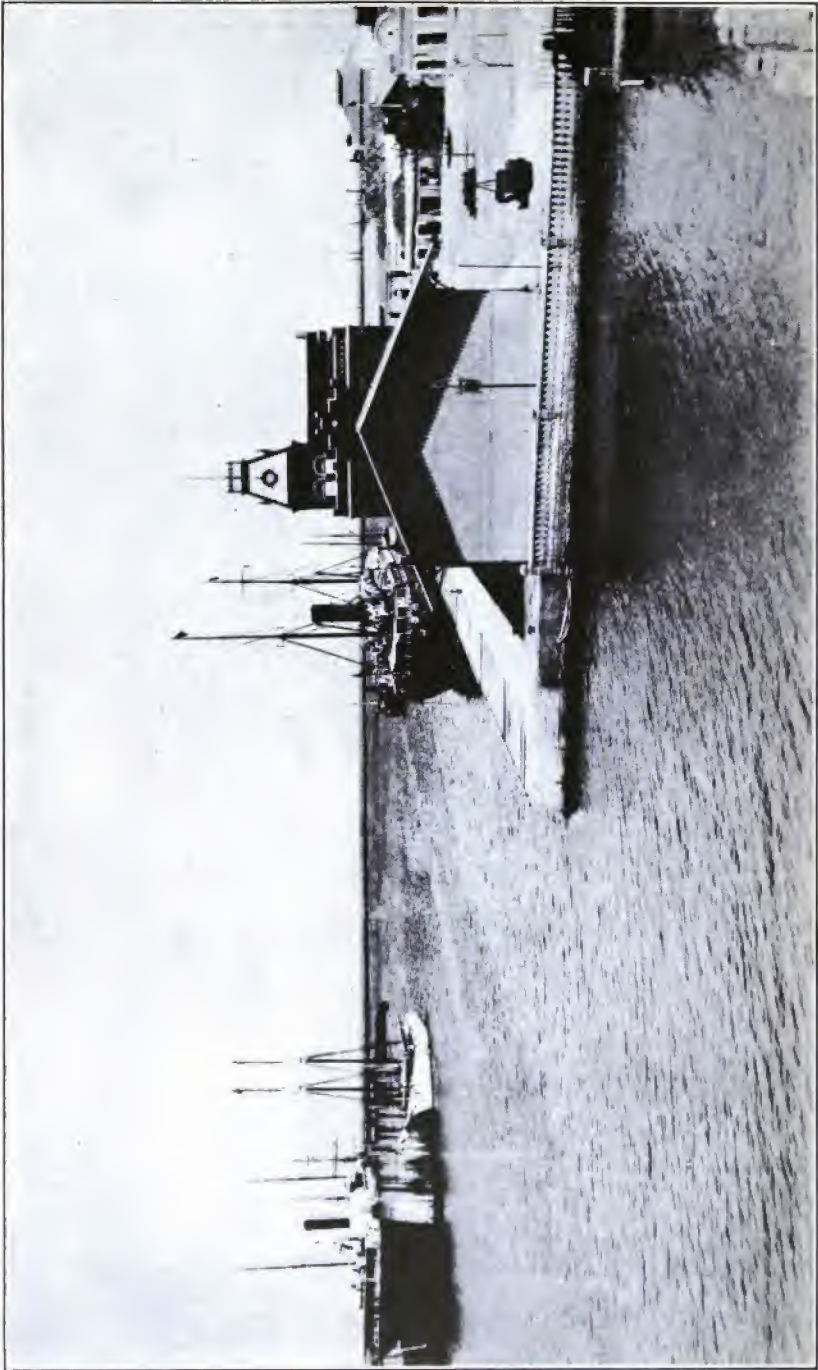


FIG. 18.—WATER-FRONT SCENE, PUERTO CABELLO.

that the vein of El Montante averages about 1 meter in thickness and that of Curamichate 0.80 meter. El Isiro vein has produced 25 tons of coal daily under the old system of operation.

The Coro coal fields produce a bituminous coal, very black and hard, of high luster, and of about 1.25 specific weight, on an average. This coal is very different from that of Barcelona, which is dull, earthy, and very friable. The percentage of powdered coal is only 20 per cent, whereas the eastern coal runs from 75 to 80 per cent. Analyses taken from time to time have shown this Coro coal to run as follows:

	Per cent.
Moisture -----	1.12 to 7.00
Volatile -----	35.17 to 49.00
Fixed carbon -----	47.57 to 79.75
Ash -----	.64 to 6.80
Sulphur -----	.15 to 8.90

Tests made on the coal from the Curamichate vein, for coking and gas production, show that 1 metric ton produces 255 cubic meters of gas (9,000 cubic feet) and 530 kilos of coke. (Cannel coal produces 311 cubic meters, or 11,000 cubic feet of gas per ton and 530 kilos of coke.) The average calorific value is stated to be from 4,823 to 7,240. With the exception of samples of coal brought from the Sabaneta vein farther inland, the Coro coal is known as bituminous lignite. The Sabaneta coal is termed a semianthracite.

The Government has worked its properties since 1904, extraction being at the average rate of 34 tons per day from all workings. The cost is calculated at 25 bolivars (\$4.82) for 1 metric ton placed on board at La Vela. The present workings at El Isiro are 24 kilometers from the sea, and it is thought that the opening of the Curamichate vein nearer to the sea would reduce the present cost to as low as 20 bolivars (\$3.86), laid down at Puerto Cabello.

It is thought that a system of aerial cableways from the mines to the beach, equipped at the terminus with an overhead wire loading gear, would be the cheapest and most efficient means of transportation here; the project is under study by the Government's engineers, and estimates are being prepared. The mines must also be operated on a larger scale and labor-saving equipment installed.

MANUFACTURING INDUSTRIES.

The Puerto Cabello and Valencia district is not highly developed industrially and does not promise to become so. Among the principal industrial establishments may be mentioned the cotton mills at Valencia (the most important manufacturing elements), vegetable-oil mills, tanneries, sugar mills, soap factories, and the frozen-meat plant at Puerto Cabello. Agriculture and live-stock raising are the chief occupations and sources of wealth.

FACTORIES OF PUERTO CABELLO.

Puerto Cabello has three soap and candle factories which use cottonseed oil from Valencia and ship their products into the interior. These go principally to Valencia and Barquisimeto for distribution, but there is also some coastwise trade in the products.

There is one small tannery making rough sole leather for export to the West Indies.

Coro has one soap factory and one tannery.

The Venezuela Meat Products Co. (Ltd.), taken over from the original British company by Vesti & Co. during the war, had a capacity of 700 head of beef cattle during 1919, frozen beef being exported to England. The plant is shut down at the present time for remodeling and repairs and remained idle during the entire year 1920.

FACTORIES OF BARQUISIMETO.

Barquisimeto, the capital of the State of Lara, has one soap and candle factory and one tannery. There are also the electric lighting plant and the ice factory, both of limited capacity. There are, of course, the usual local industries of sack making, sandals, hats, etc.

FACTORIES OF VALENCIA.

Aside from the cotton mills, with which the oil mills are allied, Valencia has four rather large soap factories, the largest being that of Frey & Co., which also owns the largest in Puerto Cabello. The Branger interests also conduct a large tannery, making sole leather for the domestic trade and for export, principally to the islands of the West Indies. There is one hat manufacturer in Valencia turning out, on a small scale, straw and felt hats for the domestic trade.

In all three of the larger cities—Valencia, Barquisimeto, and Puerto Cabello—there are several shoemakers manufacturing shoes for the local trade. Upper leather and findings are imported from the United States. Very good shoes are made, to the practical exclusion of the foreign manufactured article except for women's slippers. About 15 per cent of the people wear shoes, the others using the domestic "alpargata," or leather-soled sandal. Shoe shops are small, containing one or two machines and from two to six operatives.

The first cotton mill in Venezuela was built in Caracas in 1858 by a Philadelphian, but the venture was a failure, as were other attempts to establish the industry until Sr. Salas Perez built a mill in Valencia about 30 years ago. He built another in Caracas in 1911—the two being now united under the name of the "Telares de Caracas y Valencia," with a combined capital of 4,040,000 bolivars (\$779,720), divided into shares of 100 bolivars (\$19.30) each, now quoted on the Caracas market at 0.95. All machinery is of English make. The Valencia mill has 5,000 spindles and 150 looms and the Caracas mill 6,000 spindles and 100 looms. Yarn-spinning and dyeing plants are operated in connection with it. A knitting plant has recently been installed at Caracas by this company.

Calicos, denims, drills, grey goods, and rough sheetings are turned out for the domestic trade, as well as heavy cotton cloth for clothing. The products of the domestic mills are very well liked by the people of the country on account of their wearing qualities, and they are well suited to rough tropical wear.

Prices are based on the quotations of New York and Manchester for similar weaves, plus freight, commissions of export houses, import duties, etc. The import duty on foreign-made cotton prints is 1.25 bolivars (\$0.241) per kilo (2.2046 pounds) of gross weight, the duty varying slightly for the various weaves and weights of the cloth.

Stock of the domestic mills was selling at 50 per cent above par during the war years, when the mills realized enormous profits, made possible by the increased demand, combined with the shortage of imported stocks and the high prices in New York and England. In September, 1920, however, following the decline in the coffee market and the general depression, mills reduced their wholesale prices by 25 per cent and their stocks dropped to just below par on the public market in Caracas. The shares of all industrial companies decreased in value in proportion.

The largest cotton mill is that of the Branger interests, called the "Telares de Carabobo," located in Valencia. A large cottonseed-oil mill is operated in connection with it, as well as a modern tannery turning out glacé and "patent" leathers, sole leather, etc., for the domestic trade. The six brothers of the Branger family own large ranch estates, grow their own cotton for their mills, operate gins, etc., and have 60 mule carts and 20 motor trucks organized for city and country transportation—doing public hauling, also, as a side line.

There is also a knitting mill in connection with this industry, turning out cheap cotton undershirts. A light-weight, cheap cotton blanket, much used in the country, is also made and competes with the imported article. The plant is equipped with a complete machine shop for repair work, a small foundry, a dye plant, and other accessories. With its limekilns in Valencia, sawmill at La Victoria, cattle ranches, etc., the Branger family organization constitutes the largest industrial concern in Venezuela. The brothers received their industrial education and training in the United States, and each one has charge of a certain department of the business. Their capital is rated at 20,000,000 bolivars (\$3,860,000), and their profits during 1919 were said to be around 5,000,000 bolivars, or nearly \$1,000,000 in gold. Seven hundred men and women are employed in all branches of the industry.

The brothers are tearing down all the old, insanitary dwellings of their workmen and building modern sanitary houses for them, to avoid the economic waste of sickness and impaired efficiency and also to hold trained operatives with the concern. During the influenza epidemic of 1918, which caused such terrible ravages in Venezuela, the Branger brothers personally visited sick employees twice and three times daily, established kitchens for the preparation of suitable food, in which 50 men and women were employed night and day, and lost only one man, while an average of 100 people died daily in Valencia from the epidemic. Nowhere else in Venezuela is there such a well-organized industry on such a large scale.

In a statement regarding industrial and labor conditions, the manager of the mills said that the greatest difficulty was in securing and training higher-grade employees, such as foremen, mechanics, and leaders.

COTTONSEED-OIL INDUSTRY.

The total production of cottonseed oil in the Valencia district is from approximately 2,000,000 kilos (1 kilo = 2.2046 pounds) of seed pressed by the four mills located in Valencia. The production of oil is more than sufficient for the needs of the country. Samples sent to New York, Porto Rico, and Panama late in 1920 resulted

in the discovery that Venezuela's oil industry could not compete with similar products from the United States, though a large trial shipment was made to Porto Rico. The principal consumption of cottonseed oil in Venezuela is for soap making for the domestic market.

Two mills—those of Perez, Aikman & Co. and Frey & Co.—are devoted exclusively to providing oil for the soap factories of the respective concerns. Frey & Co. have a soap factory and oil mill in Puerto Cabello also.

The two largest mills are those of E. L. Branger (Branger Bros.) and of the Stelling interests, both located in Valencia. Another rather large oil mill is operated in Valencia by John Miller, an Englishman.

One hundred kilos of seed produce, 40 kilos of chaff and waste, 45 kilos of oil cake, and 15 kilos of oil, the seed costing around 6.50 bolivars (\$1.25) per 100 kilos, delivered at the mills in Valencia. Cotton seed can not be brought into Valencia from the fields in the neighborhood of Nirgua and San Carlos on account of the distance and the expense of transportation.

The Branger interests also own the "La Cumaca" electric lighting plant of Valencia, which is in competition with the Valencia Lighting Co. The "Telares de Carabobo" were started eight years ago on a very small scale. The cotton machinery is mostly of British make.

LIVE STOCK.

The cattle lands of the district include one-half of the great llanos of Venezuela, stretching from the line of hills, south of Lake Valencia, to the River Apure at San Fernando de Apure, and west to the Andes from the dividing line of the River Guarico. Large areas of land around Valencia proper, the lake, and as far east as Maracay, are devoted to "holding pastures" for cattle, being planted to artificial pasture grasses such as the Para and the guinea. These fenced pastures reach as far south as San Carlos and Pao, farther to the east. Cattle brought in from the plains are held for fattening and conditioning in these pastures and then driven over the highways to the Caracas market or to the packing house at Puerto Cabello. In this section there are also many fine ranches devoted to breeding, imported stock being used for crossbreeding purposes with the native stock.

There are no figures to indicate the extent of the land given over to cattle raising and pasturage, nor the number of cattle in the district. It is estimated that there are more than 2,000,000 head of beef cattle in Venezuela; at least one-half of this number may safely be credited to the Puerto Cabello-Valencia commercial district. Cattle constitute the principal industry and chief wealth, and the wealthiest men of the country are the largest cattle owners, the President himself being the largest of them all.

The Venezuela Meat Products Co. (Ltd.) owns enormous tracts of cattle lands (five or six million acres) in the Apure region, the headquarters being at San Fernando de Apure. The company controls three-fourths of the entire region, and there are parts of the lands into which no white man has penetrated as yet. An effort is being made to stock this range with cattle. The meat-packing plant of the

company at Puerto Cabello was originally established in 1913, the first shipments of frozen beef to England beginning in 1915. That year 17,847 animals were exported, with a net weight of 2,197,240 kilos (1 kilo=2.2046 pounds) of frozen beef. The following year the total was 18,267 head slaughtered, producing a weight for export of 3,315,990 kilos. In 1917, 18,335 head were killed, giving an export of 4,978,420 kilos of beef, and in 1918, 19,000 head, producing 5,867,370 kilos of beef for export. Vesti & Co. took over the plant, hurriedly increased its capacity, and handled 700 carcasses daily during 1919. In 1919 the frozen meats exported from Puerto Cabello amounted to 6,342,042 kilos, valued at 3,059,355 bolivars (\$590,456). The plant does not corn or can beef, but ships frozen quarters, etc., in steamers equipped with refrigeration. Neat's-foot oil, hair, glue, and fertilizers are turned out as by-products.

Beef cattle from the llanos are used, being driven in overland via Maracay, Valencia, and the Puerto Cabello Highway. The selected cattle are three months on the way, passing from pasture to pasture. They arrive in very poor condition, because there is no feed between Valencia and the port, when they are crossing the Coast Range of mountains. The company has provided holding pastures near the plant at the port, but the capacity so far is only 300 head, which is not nearly sufficient. There is little suitable land for pasture development along the coast within striking distance of the port. The cattle selected run between 850 and 950 pounds, live weight.

About 20,000 head of cattle per year are exported from Puerto Cabello to Cuba, coming from the same source. The same grades are taken, and in 1920 the price paid was 7 cents per pound on the hoof for 4 and 5 year old steers, live weight, after 24 hours in corral without feed or water.

Shipments of live cattle from Venezuela (Puerto Cabello and Guanta) to Cuba during 1920 were valued at about \$2,000,000.

Throughout the semiarid plateau of Barquisimeto and in the Coro region goat farming is the principal industry. The male animals are killed for the skins. A sort of hard cheese is made from the milk of the she goats and consumed in all parts of the country. Since the goats are bred at little cost on the open, arid range, profits are very large. During the latter years of the war, with skins selling in New York at \$1 and more per pound, returns were enormous. Coro exports an average of 6,500 tons of goat manure to the United States annually.

No figures are available regarding the extent of the industry, nor can an approximate estimate be made of the number of animals. The skins from the Barquisimeto region are shipped out through Puerto Cabello, via the Bolivar Railway and Tucacas. A great number of the skins produced around Coro find their way to Curaçao, and from there are exported chiefly to the United States.

In 1917 Puerto Cabello exported 1,053,807 pounds of goatskins, valued at \$394,772, of which the United States received 902,428 pounds, valued at \$370,418. In 1918, 425,950 pounds were exported, valued at \$112,320, of which the United States received 457,280 pounds, valued at \$136,951. In 1919 the amount was 2,322,866 pounds, valued at \$1,504,913; the United States received all but 2,509 pounds.

The port of La Vela de Coro exported 690,161 pounds of goatskins in 1917, valued at \$241,935; in 1918, 687,030 pounds, valued at \$281,890; and in 1919, 946,818 pounds, valued at \$504,350.

During the last half of 1920 prices for skins steadily declined, with a sharp drop toward the end of the year. Owners declared that with New York prices at between 27½ and 32½ cents per pound (November 30, 1920, quotation) for the superior and inferior grades of skins, and with the Falcon State export tax, they could not afford to continue shipments. However, these prices are on a par with pre-war quotations, and it is generally thought that the industry can continue with a fair margin of profit. Owners of flocks estimated the net profit on each skin at 1 bolivar (\$0.193), which they considered too low.

Exports of cattle hides from La Vela de Coro during recent years have been inconsiderable. In 1916 Puerto Cabello shipped 2,729,740 pounds, valued at \$491,593, and in 1917, 2,793,700 pounds, valued at \$465,691. Shipments fell off in 1918 to 1,136,500 pounds, valued at \$134,120, the reason for this decrease being found in the lack of ocean tonnage for transportation and in the restrictions imposed by the allied Governments. Heavy exports to the United States were renewed in 1919 and 1920, the statistics for 1919 showing that Puerto Cabello exported 4,796,669 pounds of cattle hides, valued at \$801,560.

TRANSPORTATION.

- There are three railways entirely within the district, having a total length of 164 miles; and the Gran Ferrocarril de Venezuela ("German railway") connects Valencia with Caracas, the capital of the country, this line serving the eastern part of the district, east of Valencia and as far as Maracay.

PUERTO CABELLO & VALENCIA RAILWAY.

The Puerto Cabello & Valencia Railway is 54.75 kilometers long (1 kilometer=0.62 mile) and runs from Puerto Cabello to Valencia. It climbs over a mountain pass 1,952 feet high and between kilometers 13 and 17 from Valencia has a rack-rail section 2.4 miles in length, over which the grade is 8 per cent, the steepest gradient on the smooth-rail sections being 3½ per cent. All the way from Naguanagua, 8 kilometers from Valencia, the line follows the break through the range formed by the canyon of a small mountain stream which comes out at the coast at El Palito, 3 kilometers from Puerto Cabello proper. The actual running time for passenger trains is two and one-half hours.

The gauge is 3½ feet; the minimum radius of curves is 91½ meters (1 meter=3.28 feet); there are 33 bridges and viaducts, with a combined length of 915.5 meters, and one tunnel 76.25 meters in length in solid rock. The roadbed follows the eastern side of the canyon. The rail on the rack section runs 70 pounds and on the others 55 pounds to the yard.

Rolling stock consists of 10 locomotives with a total weight of 398 tons. New equipment needed, including several new locomotives, has not been purchased during the war, either from the United States or England, on account of the excessive cost. There are 13 passenger coaches, 26 flat cars, 43 box cars, and 28 stock cars, the freight cars

having a capacity of 15 tons each. The passenger tariff equals 7½ cents per mile for first class and 6 cents for second class. The freight rate is equivalent to 20 cents per ton-mile, although the management, in order to increase tonnage traffic, made a reduction on down-grade, or export, tonnage, including such products as coffee, sugar, hides, etc. The cost of construction was 363,950 bolivars (\$70,242) per kilometer.

The capital of the company is 20,200,000 bolivars (\$3,898,600), representing the sum invested. The 1918 report of the company, published in London, showed 5 per cent first-charge coupon bonds as amounting to £180,000 (\$875,970), the interest paid being 5 per cent and the price 74; ordinary shares, at £10 (\$48.66), amounted to £460,000 (\$2,238,590), the interest paid was 1½ per cent, and the price was 2. The road was built under a Government guaranty of 7 per cent on the capital invested. This rate was never earned, and there followed years of dispute as to the amounts actually invested and actually earned. Some payments on this account were made by the Venezuelan Government; the guaranty was reduced to 5 per cent, and in 1916 it was definitely canceled in consideration of a cash payment of £190,000 (\$924,635).

In 1888, the year construction was completed, the road carried 62,299 passengers of both classes, producing a revenue of 205,340 bolivars (\$39,631), and 15,182 tons of freight, producing 921,261 bolivars (\$177,803). Expenses were 529,335 bolivars (\$102,162). The best year of the road was in 1903, when the German railway was being built; 57,519 passengers were carried and 41,152 tons of freight, the total gross earnings being 2,082,843 bolivars (\$401,989). Again in 1917, increased exports of corn and other products brought about by war conditions increased the freight traffic to 54,063 tons, with gross earnings at 1,262,697 bolivars (\$243,701). Increased operating expenses were incurred during the war years. Fuel was expensive, as well as repair and replacement parts, and wages had to be increased generally by about 40 per cent.

The roundhouse and repair shops are located in Valencia. The manager is W. A. Littell (address, Valencia, Venezuela), whose office does all the purchasing, most of the equipment and supplies being purchased in England through the London office.

In 1919 the road carried 53,990 passengers and 55,120 tons of freight, the gross earnings being 1,472,061 bolivars (\$284,108) and the expenses 823,706 bolivars (\$158,975).

Except for the coffee plantation along the right of way at Las Trincheras in the canyon and a short stretch of country near Valencia, the territory traversed by the line is unproductive and mountainous. From 300 to 700 head of beef cattle have been used daily at the plant of the Venezuelan Meat Products Co. in the port, but these cattle were nearly all driven down to the coast over the highway paralleling the railway, this method being thought cheaper.

The locomotives on the rack-rail section use oil for fuel, furnished from the tanks of the Caribbean Petroleum Co. at Puerto Cabello, which also supply the Bolivar Railway, running from Tucacas to Barquisimeto. Venezuelan coal is used on the other sections, being furnished from the supply at the port handled by the Government and originating at the Coro coal mines.

No new extensions or improvements are contemplated by the company at the present time. This railway is controlled by the same company that controls the La Guaira-Caracas line. During the administration of Guzman Blanco, the "German railway" promoters were promised the concession to the port, as well as that for a line from Cagua to San Fernando de Apure, and another branch to San Carlos, capital of the State of Cojedes and the center of one of the richest undeveloped agricultural regions of the Republic. The proposed route from Valencia to San Carlos would be approximately 98 kilometers long; it would greatly assist in developing that region and would add to the traffic of both lines—the one to Caracas and the one to the port. Just prior to the war there was serious thought, on the part of the British-controlled roads, of purchasing the German line between Caracas and Valencia.

The Valencia and Puerto Cabello Highway, constructed by the Government just parallel to the railway, carries considerable freight traffic in the usual two-wheeled, one-mule carts of the country, and the light automobile has seriously impaired passenger-traffic returns.

BOLIVAR RAILWAY.

The Bolivar Railway was originally constructed in 1835 to serve the Aroa copper mines, which were, however, shut down in 1840. In 1862 work on both the mines and the railway was recommenced, only to be paralyzed again. In 1872 the work was definitely accomplished, service to Barquisimeto being established in 1877, making this railway the oldest in Venezuela, with the exception of a short line from Puerto Cabello to El Palito, called the Eastern Railway of Venezuela, which was only 4 kilometers in length (1 kilometer=0.62 mile). The next line to be put into service was the La Guaira-Caracas Railway in 1883.

The Bolivar Railway runs from the port of Tucacas, 29 miles northwest of Puerto Cabello by sea, to the copper mines of Aroa and to Barquisimeto, capital of the State of Lara. In 1915, 20 kilometers of the branch from Palma Sola to San Felipe, capital of the State of Yaracuy, were constructed, the total length of 42 kilometers being completed in 1917. The length of the main line is 176.5 kilometers and the contract length 218.5 kilometers. The gauge is 2 feet, and the rail runs 48 pounds to the yard. The capital stock amounts to \$6,822,550 United States currency, and the investment to date is \$5,974,600. The maximum grade is 5.27 per cent and the minimum radius of curves 46.83 meters (1 meter=3.28 feet). The ties are of wood (with some of steel, also), and there are 518 bridges and culverts, having a combined length of 2,119 meters.

The road has 13 locomotives with a combined tonnage of 294, 9 passenger coaches, 69 flat cars, 61 box cars, and 125 stock cars, the freight capacity being 10 tons each. The passenger tariff is 5.8 cents per mile for first class and 3.8 cents per mile for second class. The freight rate charged equals 29 cents per ton-mile.

From 1895 to 1902 the road's gross income decreased steadily until in the latter year it was only \$91,711, after which it rose to \$506,590 in 1913. The management has made an effort to increase agriculture along the line.

The branch connecting the mines at Aroa with the main line at El Hacha is 13.59 kilometers in length and has a grade of 5.27 per cent. The offices and shops are located at El Hacha.

By far the best year for the road was 1917, the increase in traffic being due to the movement of copper ore and matte to the coast and the exportation of other products. The total tonnage handled was 76,982 (of which 41,271 tons represented mine products for export). The total gross revenue was 3,371,319 bolivars (\$650,665) and the expenses 1,912,408 bolivars (\$369,095).

The average cost of construction per kilometer was 175,301 bolivars (\$33,833). The highest elevation encountered is at Duaca, at kilometer 128 from Tucacas.

Oil is used for fuel, being supplied from the storage tanks of the Caribbean Petroleum Co. at Puerto Cabello and transferred to Tucacas in a small motor tank vessel owned and operated by the railway company.

Improvements at Tucacas consist of storage bins for copper ore and a set of steel lighters for transferring cargoes of ore and matte to the steamers lying at anchor in the roadstead.

The running time between the port of Tucacas and Barquisimeto is 10½ hours, with a stop of 35 minutes at El Hacha for luncheon. Passenger trains are operated on Mondays and Thursdays both ways, Puerto Cabello being reached by means of a steam launch that runs between that port and Tucacas on Wednesdays and Saturdays. This launch leaves Puerto Cabello on Wednesdays at 2 p. m., reaching Tucacas at 5.30 p. m. The traveler must remain in Tucacas that night and take the train for Barquisimeto the next morning. If the Saturday launch is taken (leaving at the same hour) the traveler must remain in Tucacas over Sunday, as there is no train to Barquisimeto or San Felipe until Monday morning. Travelers from Barquisimeto and San Felipe must remain over night at the port of Tucacas. Salesmen and travelers who can afford it much prefer the trip by automobile either from Valencia, via Montalban and San Felipe, or from Puerto Cabello, via San Felipe. In the present condition of this road, it takes a day of hard driving in a light car to reach Barquisimeto from Puerto Cabello.

The manager of the Bolivar Railway—long a resident of the country—has about completed the study of a new proposed branch, or connecting line, which would run from some point on the main line to Valencia through the rich but undeveloped agricultural lands lying between the two railways. The drawbacks are the lack of immediate tonnage and the remote prospect of development on account of the lack of sufficient population throughout the region.

CORO & LA VELA RAILWAY.

The Coro & La Vela Railway connects Coro, the capital of the State of Falcon, with the seaport of La Vela, known as La Vela de Coro. It is only 8¼ miles long (13.37 kilometers), and its construction cost was 1,040,000 bolivars (\$200,720), or 77,786 bolivars (\$15,013) per kilometer. The line traverses the lowlands forming the base of the peninsula of Paraguana, Coro being situated on the western side and La Vela on the eastern. It is subject to floods and washouts, and heavy competition is encountered in the cart traffic

by local workmen, though the Government cut the rates in 1916 until the cart traffic should, theoretically, have ceased.

The gauge is $3\frac{1}{2}$ feet, weight of rail 48 pounds to the yard, maximum curve radius 117 meters (1 meter = 3.28 feet), and maximum gradient 0.84 per cent. There are 8 bridges and viaducts, with a total length of 366 meters. The road has 2 locomotives in operation, handling 1 passenger car, 1 flat car, and 1 box car. The passenger rate is 2 bolivars (\$0.386) for the trip, and the freight rate on 1 ton of merchandise either way is 20 bolivars (\$3.86).

This road was taken over by the Government under the loan of 1895, when the accrued debt of the original company was canceled together with all guaranties. The best year of the road was its first year of operation, 1898, when the gross receipts were 68,098 bolivars (\$13,143). The maximum quantity of goods handled is 10,800 metric tons. Expenses about equal income, and some years the road is operated at a loss. It is under the same management as the Government coal mines of the Coro district.

HIGHWAYS.

The district has four main cart-road highways, that from Valencia to San Carlos forming a part of the Great Western Highway which it is planned to put through eventually to the Colombian border. Barquisimeto also has several main roads which connect it with the important towns of the region. Small two-wheeled mule carts compete with the railways for freight, and the light automobile is carrying nearly 50 per cent of the passenger traffic where highways parallel railways, and nearly all of it throughout the rest of the district. The roads are narrow and can not be used for heavy auto-truck traffic on account of the light surfacing, the heavy grades encountered in many places, and the sharp curves.

The Valencia and Puerto Cabello Highway is a well-constructed road following the line of the railway, which it parallels. Its length is 53.6 kilometers (1 kilometer = 0.62 mile), and the run can be made by automobile in about two hours during the day. A good driver can make Caracas from the port in one day, via Valencia.

The Puerto Cabello and San Felipe Highway is an old cart road now under reconstruction via El Palito and Urama. The total distance is 92 kilometers. No heavy elevations and grades are encountered en route, but the country is cut up with small ranges of broken hills, and there are many small watercourses to be crossed, which are flooded in the rainy season and make motor traffic impossible. New steel bridges are being provided, however, and the road rapidly put in shape for all-year traffic. A section of the road continues on to Barquisimeto, via Guama, Chivacoa, and Yaritagua, and construction is under way to connect with San Felipe and Puerto Cabello. Light cars make the run from Puerto Cabello to San Felipe in $3\frac{1}{2}$ hours—and in 8 hours more to Barquisimeto during the dry season of the year.

An important highway connects Valencia with the Nirgua district and is being constructed on into San Felipe. The road has now a length of 100 kilometers, via Montalban, in the region of which there is considerable hilly country to be traversed en route.

The Valencia and San Carlos Highway, 98.75 kilometers in length, is an old road that has recently been repaired and reconstructed to

form a part of the Great Western Highway which will connect Caracas with the Colombian border via Valencia, San Carlos, Guanare, and Barinas—construction now being carried on actively in sections between San Carlos and Guanare. The run in an automobile from Valencia to San Carlos can be made in three hours in daylight. This road crosses a rich agricultural district, which is the scene of recent developments in the way of cotton and rice cultivation and new cattle pastures.

The Barquisimeto-Carora Highway formed a part of the old road that was constructed by Gen. Castro from Barquisimeto to Santa Rita, on Lake Maracaibo, and that has now fallen into decay, with the exception of the Carora section, which has been kept up by the State government from time to time, though this road can not be said to be in very good condition at present. The distance from Barquisimeto is 116 kilometers, via Atarigua and Arenales, from which place the road follows the narrow valley of the River Tocuyo's headwaters.

The Coro-Cumarebo Highway connects the capital of the State of Falcon with the farming region along the coast, centering at Cumarebo. Its length is 43 kilometers.

Another old road connects Barquisimeto with the important interior town of El Tocuyo, 69 kilometers distant, the highest point being passed at El Quibor, about halfway. Tocuyo lies at the foot of the Western Range of the Venezuelan Andes, on the western side. The trip has been made in automobile from Caracas to Trujillo in the dry season, via Tocuyo and Carache, but there is no road beyond Tocuyo.

TRAILS.

All the larger villages of the interior and coast points are connected with one another and with the larger centers by mule trails of excellent construction and repair. These trails serve for bringing down the coffee, cacao, etc., from the higher elevations and more difficult ground of the interior to the points of shipment for export. In no other country of Spanish America is there such a complete system of good mule trails as throughout Venezuela. They are greatly superior to the interior trails of Mexico not only in character of construction but also in the attention bestowed upon them yearly.

WATERWAYS.

With the exception of the rivers of the far interior, which connect Guanare and Barinas with the Apure and thence with the Orinoco during the season of high water, the only navigable river of the district is the Rio Tocuyo, which in the rainy season (reaching its maximum in this region in January and February) can be ascended by light boats and canoes as far as the town of Siquisique. Rafts of lumber for ultimate use in Valencia and Puerto Cabello are brought down during each season of high water, the timber being cut during the dry season. The best known and most valuable of the timber extracted is the red cedar.

STATISTICS OF FOREIGN TRADE.

The average annual value of imports into Puerto Cabello during the years 1915, 1916, and 1917 was \$2,828,748, of which goods amount-

ing to \$1,805,495, or 63.8 per cent, came from the United States. In 1918 imports were reduced to \$2,061,464 on account of trade restrictions during the latter years of the World War, after the entry of the United States into the conflict. In 1919 there was a notable increase, the imports at Puerto Cabello amounting to \$4,023,944.

Imports consist largely of staple products, provisions and manufactures suitable for everyday use, together with some raw materials and machinery. Among the leading imports may be mentioned flour, rice, cotton manufactured goods, iron and steel manufactures, bags and bagging, thread, coal, drugs and medicines, and raw materials for soap making. Paper and paper products also form a considerable item. Import duty rates make practically impossible the importation of shoes, laundry soap, matches, ready-made clothing, horseshoes, trunks, and furniture.

Imports into La Vela de Coro were valued at \$135,629 in 1919. There is only a poor market for luxuries, novelties, and articles for which there is merely an occasional demand.

Average annual exports from Puerto Cabello during 1915, 1916, and 1917 were \$5,341,252, of which 42.7 per cent went to the United States. They consisted of the following products: Coffee, 54.2 per cent; cacao, 13.1 per cent; hides and skins, 12.5 per cent; copper ore and matte, 6.9 per cent; frozen beef, 6.4 per cent; sugar, 2.6 per cent; all other articles, 4.3 per cent. In 1918 the value of Puerto Cabello's exports was \$3,990,970, while in 1919 they registered a very great increase—to \$16,043,386.

Exports from the port of La Vela de Coro during 1915, 1916, and 1917 averaged \$319,967 per annum—goat skins, fertilizer, coffee, and divi-divi furnishing the chief items. In 1918 the value of the exports was \$301,479, while in 1919 there was an increase of more than 100 per cent, the value being \$687,090.

War-time restrictions on shipping served to increase the relative importance of La Guaira and Puerto Cabello at the expense of the smaller ports. Seagoing vessels no longer called at the small ports, which were compelled to supply their wants from Caracas by coasting trade. The gradual centralization of the wholesaling trade in Caracas has also increased the national coasting traffic. Imports into Puerto Cabello were abnormally great in 1917 owing to the enlargement of the meat-freezing plant there.

The heavy increase in exports in 1919 was due mainly to the renewal of ocean traffic, permitting the shipment of supplies of coffee, cacao, hides, etc., held over from the war years and disposed of on the American market at extraordinarily high prices. Exports during the first part of 1919 included at least a part of the 1918 crops.

German firms had on hand large stores of coffee, cacao, and hides which they had been forced to receive during the war years in return for money advanced on crops according to their customary system of trading in Venezuela, and they could not export on account of the "enemy-trading" restrictions. During the period of high prices in 1919 these German firms, long established in the country, realized enormous profits, the trading restrictions really reacting to their very great advantage.

The following table shows the articles invoiced at the American consulate at Puerto Cabello for exportation to the United States during 1919 and 1920:

Articles.	1919		1920	
	Quantity.	Value.	Quantity.	Value.
Beans, Tonka.....pounds..	5, 222	\$1, 922	.....	.....
Bones.....do.....	.....	.....	407, 788	\$2, 586
Cocoa.....do.....	3, 073, 090	665, 079	3, 117, 277	654, 925
Coffee.....do.....	14, 640, 137	2, 568, 979	7, 935, 999	1, 564, 561
Drums, empty.....number..	271	3, 568	213	2, 958
Hides.....pounds..	2, 394, 723	539, 982	1, 503, 389	317, 694
Nuts:				
Coconuts.....do.....	.....	.....	12, 159	251
Kola.....do.....	.....	.....	4, 907	6, 320
Orchids.....do.....	20, 956	3, 862	.....	.....
Ores, copper.....tons.....	2, 319	137, 108	4, 480	40, 640
Rubber.....pounds..	54, 308	27, 628	36, 785	16, 731
Seeds:				
Castor.....do.....	350, 871	17, 607	.....	.....
Cotton.....do.....	.....	.....	37, 397	2, 081
Sisal.....do.....	.....	.....	21, 595	1, 267
Skins:				
Deer.....do.....	101, 705	24, 062	104, 279	28, 751
Goat.....do.....	2, 261, 432	1, 595, 872	1, 264, 095	996, 378
Slaughterhouse by-products:				
Fertilizers.....do.....	.....	.....	264, 377	2, 502
Other.....do.....	.....	.....	230, 023	4, 734
Sugar:				
Centrifugal.....do.....	5, 434, 889	257, 434	7, 854, 928	543, 349
Raw.....do.....	.....	.....	1, 011, 579	85, 721
Wood.....do.....	86, 066	1, 175	971, 711	17, 349
All other articles.....do.....	.....	7, 172	.....	4, 961
Total.....	.....	5, 851, 475	.....	4, 263, 729

Returned American goods were valued at \$8,710 in 1919 and \$3,391 in 1920.

Exports from Puerto Cabello to Porto Rico decreased from \$45,440 in 1919 to \$18,469 in 1920.

COMMERCIAL METHODS.

The bulk of the business passing through Puerto Cabello for the Valencia and Barquisimeto districts is done through export commission houses in New York who sell to merchants and buy or handle for them the products of the district for exportation. This business is handled chiefly on "open account," with a settlement from time to time. Credit terms are usually from 60 to 90 days from acceptance of draft by the purchaser.

Commercial credit information is not easy to obtain, and care should be taken in extending credit, which should usually be confined to the old established or accredited firms of standing in the business centers named. Commercial operations should be governed by the economic factors of the district covered by the local firms purchasing supplies of goods and general merchandise. Coffee, constituting the principal article of export and the chief wealth of the region, should be taken as an indication of conditions, which are largely dependent on prices and crop yields each year.

Credit information may best be obtained by applying through the New York offices or branches of the following banks which have agencies or branches in Puerto Cabello and Valencia: National City Bank of New York; Mercantile Bank of the Americas (Banco Mercantil Americano de Caracas); Commercial Bank of Spanish America (Anglo-South American Banking Corporation (Ltd.), of London);

Royal Bank of Canada. This last-named bank is the only one having a branch in Puerto Cabello, the other banks maintaining agencies. The Mercantile Bank of the Americas maintains a branch in Valencia. Two native banks, the Banco de Caracas and the Banco de Venezuela, maintain agencies here and can sometimes furnish credit information and handle drafts. Most of the business originating in the United States is, however, handled by the branches and agencies of the foreign banks established in the country and having their headquarters in Caracas.

EXTENT OF TRADE AND VOLUME OF BUSINESS.

Before the construction of the Gran Ferrocarril de Venezuela between Caracas and Valencia, the latter city was the center of trade for the entire commercial district herein described. The German houses predominated very largely, being organized to do a general import and export business, making advances on the crops and exports of the country directly to the producers, and selling bills of merchandise at long credits in the interior. The trade of Valencia was even more important than that of Caracas in many ways. With the completion of the "German railway" in 1894, the trade gravitated to Caracas, the political, financial, and commercial center of the country. Many of the larger German houses had divided their activities between Caracas and Valencia, but now concentrated in the national capital, maintaining branches in Valencia and Puerto Cabello. The principal importers of Puerto Cabello have long been German houses, the largest ones at present being branches of Caracas houses, though four of them make the port their headquarters and have their main offices there, engaging strictly in the trade with the Valencia and Barquisimeto regions of the interior.

One large American house (the Venezuela Commercial Co., a branch of W. R. Grace & Co.) has a large branch in Puerto Cabello and imports direct, selling to Valencia, Barquisimeto, San Felipe, and other less important points of the interior. This house has its own steamship line, the New Orleans & South American Steamship Co., with two freight and passenger boats monthly between Venezuelan ports and New Orleans. Its business is strictly wholesale. The other houses importing directly, and also those which are branches of the large Caracas houses, maintain retail stores as well for the local trade. All stores, with the exception of two that specialize in groceries, wines, and liquors, handle general merchandise, of which cheap cotton textiles form the larger part. They number 13 in all. Salesmen from Caracas, representing the large importing houses there, and agencies of American and English commission firms also cover Puerto Cabello, Valencia, Barquisimeto, and San Felipe periodically by light automobile, thereby increasing the evident tendency of business to concentrate in Caracas.

Valencia has 24 firms in all lines, the stores handling general merchandise, also carrying stocks of hardware and tools. Only a few of these firms import direct. Six of these have a capital of \$100,000 or more, seven have a capital of \$50,000 or more, and there are five more that have a capital of \$25,000 or more.

Barquisimeto has eight commercial houses of importance, of which one has a capital of \$600,000, one \$300,000, one \$200,000, and one

\$100,000, all of which are direct importers through Puerto Cabello, shipments being sent to them via Tucacas and the Bolivar Railway.

Coro has five principal firms, the largest of which has a capital of \$80,000. There are also several branches of Caracas houses established there, and several important commercial houses of Curaçao maintain branches in Coro and La Vela, engaged in the goatskin and divi-divi trade of the region.

In the far southern limits of the district, San Fernando de Apure has six firms handling general merchandise and two drug stores. The largest capital is stated as \$190,000. San Fernando buys from Caracas and Valencia, while Barinas and Guanare trade with the nearer centers of Merida and Trujillo by pack-mule transport, and, during the season of high water in the Apure and Orinoco Rivers, exchange products for goods with far-away Ciudad Bolivar by river steamer.

American firms interested in developing their trade with this commercial territory of Venezuela should have their representatives make Valencia, Puerto Cabello, San Felipe, and Barquisimeto as separate units—taking the precaution, however, not to disturb trade relations long established with certain firms of these places by the large houses of Caracas, on which advance information should be obtained. As a rule, the large importing houses are the principal exporters of the country's products of coffee, cacao, hides and skins, etc., and have long-established connections with the smaller dealers of the interior who collect these products. Very often advances have been made on crops, in the form of either money or merchandise, under special conditions arranged to attract exports. It is not possible to indicate the time and expense necessary to cover the territory, as these factors depend upon the line or lines handled, the time already spent by the firm in Venezuela, the work of previous agents or representatives, and the nature of the business—that is, whether direct representation of factories not previously represented in the country, or work for a commission house, or other kinds of commercial effort.

The parcel-post service is being used more and more by importers maintaining general stores for the purpose of keeping on hand small but attractive stocks of seasonal merchandise, such as dry goods, women's wear, notions, etc. This method, however, suffers in Venezuela from the practices of the customs authorities at port of entry, where all parcel-post imports have to be examined and cleared, the importers being forced to accept the customs liquidation in advance in writing, accepting all fines, etc., at the same time. Importers of the interior have resorted to the services of customs agents in the ports of entry, who accept the shipments and pay the duty, fines (if any), etc., and then forward the goods to the purchaser in the interior.

It is thought that the system in force in the neighboring country of Colombia would work out to much better advantage, with the goods passing through the port of entry without intervention of the customs and in full charge of the postal authorities, who later carry out the liquidation of charges and import duties at the point of destination in the presence of the addressee.

The strict requirements governing parcel-post imports into Venezuela are partly due to the onerous customs regulations and partly to the former abuse of the service by some merchants who, when fined for infractions of the custom rules, refused to accept the shipment, which was abandoned to the customhouse then and there. In this the shippers, especially those of the United States, were often to blame, on account of their apparent lack of knowledge of these very regulations and the Venezuelan customs requirements, and also their lack of attention to details of packing, declarations, etc.

However, by 1920 parcel-post shipments from the United States had greatly improved in these respects, customs employees declaring that parcels received from the United States were, as a rule, much better packed than those from European countries.

TENDENCY OF TRADE WITH UNITED STATES.

All other factors of price, quality, and terms being equal, the importers of Venezuela much prefer to buy in the United States—for two reasons, mainly. The first reason is found in the shorter distance between the two countries, which makes for much quicker delivery of orders; goods can be delivered in about six weeks (from date of order) from the Atlantic seaboard of the United States as compared with three to four months from Europe. Shorter delivery time does away with the necessity for long-credit terms and permits the importer to carry smaller stocks of staple merchandise, more often renewed.

The second reason is found in the fact that the United States is the best customer for Venezuela's exports, this condition very often resulting in balances carried in the United States, greatly facilitating payments, etc. Several large American houses which are heavy buyers of coffee maintain resident representatives in the Puerto Cabello and Valencia districts, and other houses handling exports from Venezuela have periodical representation during the shipping season.

In the approaching era of competition with Europe the keynote of exporters of the United States should be greater attention to the details of exporting, such as packing, invoicing, declarations, etc. Packing is the most prolific cause of complaint. This should be as light as possible consistent with safety of contents, because duty is assessed on the gross weight. Another frequent cause of complaint is the damage to goods resulting from careless handling in transit; steamship companies are seldom held responsible for the full extent of the damage, and insufficient care is taken in the important matter of insurance, which should in every case cover full policy. Importers should themselves be satisfied before the shipment is sent out that it is fully covered.

Since most of the business is handled through export commission houses, which know the trade conditions of the country and its requirements, greater cooperation between such houses and the factories and manufacturers supplying the goods is needed. It is impossible for the export commission house always to see and inspect goods before shipment is made, and perhaps the greater portion of trade complaints

have their origin in the careless way in which orders are filled and shipped. Very often the manufacturer does not understand the intimate bearing of some small detail, or some apparently unimportant change in specifications, for which there is really a very good reason and of which the customer is the best judge. The best plan is for exporters to follow to the letter the instructions for billing, invoicing, and packing given by the buyer, who knows what he has to meet. So much trouble has been experienced that purchasers are very careful to set forth in detail on their orders full instructions for declaring merchandise and for packing.

CIUDAD BOLIVAR COMMERCIAL DISTRICT.

LOCATION AND TERRITORY.

Ciudad Bolivar, situated on the right bank of the great Orinoco, approximately 230 miles from the Atlantic Ocean, is the commercial and trading center of a territory covering more than half of the total area of Venezuela. The region is at the same time the least developed and the most interesting of the four commercial districts into which the country is divided. It includes the territory of the Orinoco River system, which drains 204,600 square miles—an area larger than that of Spain. It also contains the great mountain area of the Guiana highlands and the Parima Range extending south to the Brazilian frontier—an area that includes elevated plains and unexplored forests. Its river system links it with the great plains of Colombia far to the west and southwest. Another great topographical division is formed by the territory covered by the Orinoco delta, which extends from the boundary with British Guiana on the south to the shore opposite the island of Trinidad on the north.

Famous for two centuries as the land of the mythical city of Manoa and the golden region believed to exist up the Orinoco, it was the cause of the first English intervention in Trinidad in 1595 and again in 1617 under Sir Walter Raleigh. In more modern times the gold fields of El Callao have produced millions, and the territory of the region of Guacipati and the Upper Uruari was the cause of the boundary dispute between Venezuela and Great Britain that brought about the invocation of the Monroe Doctrine by President Cleveland in 1895, the dispute being finally settled by the award of the tribunal of Paris on October 3, 1899.

The territory may also be said to include the southeastern corner of the great plains of Venezuela lying north of the Orinoco and extending as far as Maturin in the State of Monagas. The edge of the llanos north of the Orinoco as far as San Fernando de Apure may also be included, as the river furnishes the highway of communication as far back as the headwaters of the largest tributary, the Rio Apure, as Guasqualito, and as far as Cobarua on the Rio Arauca, on the Colombian frontier not far south of Cucuta.

The chief products of this region, intensely tropical throughout, are those of the forests, the river system furnishing the means of access and transportation. Next in potential importance comes gold mining, now neglected but capable of yielding great wealth with the development of better transportation facilities to the gold fields.

TOPOGRAPHY.

The great plains of Venezuela extend from the foot of the Venezuelan Andes on the west to the delta of the Orinoco on the east, a distance of roughly 650 miles; the northern limit is the line of the Coast Range, approximately 200 miles north of the Orinoco, the river form-

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ing the dividing line between the northern plains and those to the south in the region of its great southern tributaries, the Meta and the Arauca. This latter territory is inaccessible except for the canoes of the rubber hunters in the season of high water in the rivers.

The delta of the Orinoco, a separate political division called Delta Amacuro, extends from the Rio Vagre (an outlet of the Orinoco, which divides the northern part of the delta from the plains farther inland), south to the boundary with British Guiana, taking in the main channel of the Orinoco, called the Carosimia, which is navigable for steamers of about 3,000 tons as far as Barrancas. To the north of the Carosimia there are five principal outlets of the Orinoco—the Rio Vagre, the Rio Cuscuina, the Rio Pedernales (connected with the Cuscuina), the Rio Macareo, and the Rio Mariusas—all flowing into the Atlantic south of Trinidad, with the exception of the Vagre, which empties into Vagre Bay in the Golfo Triste, formed by the Peninsula of Paria and the Island of Trinidad. The straits between Trinidad and the mainland are called the Serpent's Mouth, on the south, and the Dragon's Mouth at the northern entrance.

The delta territory covers an area of 40,200 square kilometers (1 square kilometer=0.386 square mile), but the region is one of wide waterways lined with dense tropical forests, subject to overflow in times of high water and interspersed with great swamps. The higher lands along the watercourses are inhabited by a few tribes of Indians, numbering about 9,000, who live by gathering the products of the forest and by fishing. The delta land is probably the least important of the regions pertaining to the commercial center of Ciudad Bolivar, the areas to the south and up the Orinoco being much more productive from a commercial standpoint.

South and east of the Orinoco lie the Guiana highlands, which include all of that vast and more or less unexplored region of Venezuela lying along the right bank of the Orinoco and around its headwaters. This area is primarily one huge plateau about 1,000 feet or more in height, from which rise a few of the principal mountain ranges with some peaks over 8,000 feet high, while smaller chains of hills link up the larger ranges or mountain groups. The highest ground is found along the Brazilian frontier, beginning at Mount Roraima (8,000 feet), where Venezuela, Brazil, and British Guiana come together. This main range then extends to the south and west, in the Sierras Pacaraima and Parima, to the headwaters of the Orinoco near Esmeraldas, in the southernmost part of the Territory of Amazonas. From the Roraima Range the Orinoco-Cuyuni watershed extends northward within Venezuela, along the Sierra Rincote and Usupamo and the highlands of Piedad to the Sierra Piacoa, and thence southeast along the Sierra Imataca to the British limits again. The Sierra Maigualida forms the watershed between the Caura and the Ventuari.

The entire area is well watered by the upper Orinoco, which flows here from south to north, and the Rio Ventuari and other great tributaries, the Cuchivero, Caura, Aro, Caroni, and their affluents. Large as these rivers are, they are so broken by rapids and so subject to alternate floods and extreme low water that travel along them is possible only in small canoes and other portable craft, and even then their passage is fraught with danger and delay.

South of the Orinoco from Ciudad Bolivar toward the Rio Paragua, the principal affluent of the Caroni, there are scattered areas of table-land more or less open and covered with long grass. With this exception, the whole enormous region of about 204,600 square miles is covered with tropical forest, which contains much valuable hardwood timber, rubber, tonka beans, copaiba balsam, Brazil nuts, and many less known products of the South American Tropics.

The Orinoco rises in the summits of the Parima Range in the southern part of Venezuela, and flows northwest, north, and northeast to its outlet in the Atlantic Ocean—a course of about 1,500 miles. The first large tributary is the Rio Ventuari, which comes from the northeast in Amazonas Territory and forms a large interior delta as it joins the Orinoco. Not far beyond this point the Rio Atabapo enters the Orinoco from the south. From the upper reaches of the Rio Negro (there called the Guainia), a tributary of the Amazon, to the beginning of the Atabapo is only a short distance; and this is the dividing line between the Orinoco and Amazon watersheds, the Orinoco being connected with the Rio Negro by the Casiquiare Canal, which is navigable for light canoes during the rainy season. Thus it is possible to travel by canoe from the mouth of the Orinoco to the mouth of the Amazon, via this canal and the Rio Negro. In fact, the trip has been made by a French explorer, who spent some two years on the journey and whose exploit has never been equaled except, possibly, by those of the early adventurers who navigated the Amazon, crossing from the Pacific to the Atlantic by the river.

As it flows north from its junction with the Atabapo, the Orinoco is joined from the west by the Guaviare, the Vichada, and the great Meta, all having their sources in the Cordillera Occidental of the Colombian Andes. Of the two smaller western tributaries, the Rios Capanaparo and Arauca, the latter is the larger and more important, as it is navigable during high water for small, shallow-draft launches as far as the Colombian border.

From the Apure, the next important tributary, to the ocean the Orinoco is joined on the south by the Caura, the Aro, and the Caroni. The last-named is by far the largest and, with its tributary, the Paragua, drains the entire territory from the boundary with Brazil along the mountain ranges of Uriuana and Pacaraima. On the north the Orinoco receives the waters of many small streams that drain the great plains; but none is important until the delta country and the Rio Vagre are reached.

The river enters the sea through more than 50 branches, the most important of which are the Rio Vagre and the southernmost channel, the Carosimia. The waterway is navigable for steamers of about 1,500 tons as far as Ciudad Bolivar—by the Carosimia to Barrancas at the beginning of the delta and thence by the Orinoco.

The course of the Orinoco is 2,373 kilometers (1 kilometer=0.62 mile) in length, and it is navigable for 1,930 kilometers from the Atlantic Ocean. River steamers of 60 tons' burden can ascend the Orinoco from Ciudad Bolivar to San Fernando de Apure on the Rio Apure during the season of high water, and small steamers follow on up the Apure, the Arauca, and the Meta nearly as far

again. However, there are rapids that constitute an impediment to navigation during the dry season of the year (December to June) so that only the smallest steamers (less than 40 tons' burden) can get as far as San Fernando and these only with difficulty.

The Rio Apure has a length of 1,187 kilometers, of which 1,005 kilometers are navigable. The territory drained by this river and its tributaries covers approximately 128,000 square kilometers. The Uribante is a tributary of the Apure that rises near San Cristobal, capital of the State of Tachira, and flows around the end of the Venezuelan Andes from the southern slope of the Maracaibo western watershed. Other tributaries are the Portuguesa and the Guarico. The Portuguesa drains the great area south of Lake Valencia and Barquisimeto and joins the Apure at the town of San Fernando de Apure. The Rio Guarico rises near Lake Valencia south of the Coast Range and very near the Caribbean Sea. This river, navigable for small canoes as far as the town of Calabozo in the wet season, crosses the great plains of Venezuela. Along its headwaters it has the aspect of a swift mountain stream in many places; it runs through groups of hills, which form the inland chain of the Coast Range, and, according to present plans, is to provide hydroelectric power for the central industrial region of Venezuela.

The Guaviare has a total length of 663 kilometers and drains an area estimated at 37,280 square kilometers. The Meta is 902 kilometers long and is navigable for almost its entire length in the season of high water. It drains an area estimated at 111,600 square kilometers. The Caroni has a length of 892 kilometers, of which approximately 782 kilometers are navigable for canoes. The drainage area is estimated at 56,800 square kilometers. The Cuyuni and its tributary, the Yuruari, rise in the Guiana highlands in Venezuelan territory. The Cuyuni, which flows into the Essequibo near Georgetown in British Guiana, drains a very large area. The Rio Negro drains a territory in Venezuela calculated at 100,000 square kilometers, but this territory is a part of the great Amazon basin.

Details of the navigation of the Orinoco River system are given under the heading "Transportation."

SURVEY OF TERRITORY OF AMAZONAS.

As the territory directly tributary to Ciudad Bolivar will be described in more detail later, the present description of the river system need include only a general survey of the vast and little-known Territory of Amazonas, which lies to the east of the Orinoco and the Rio Negro, extending as far north as the confluence of the Rio Meta and including the ill-defined watershed between the Orinoco and Amazon basins. The area included in this territory amounts to about 281,700 square kilometers (1 square kilometer=0.386 square mile), and the population, as estimated in December, 1917, was 45,097, a density of 0.2 per square kilometer. Of this enormous region practically nothing is known, save the character of the country along the banks of the principal rivers and such parts of the hills and forests as have been traversed by the rubber hunters and the few explorers who have penetrated the hinterland of the Orinoco and the Guianas.

On the northern and eastern borders the general character of this great region is like that of Bolivar. To the south the Brazilian frontier follows the watershed of the Parima Range and those of the Uriuana and Pacaraima farther to the east. Leaving the southern extremity of the Parima Range, the Brazilian line strikes southwest to the Rio Negro, this line not being marked by well-defined natural features.

The center of this huge area is the village of San Fernando de Atabapo, situated where the Orinoco, Atabapo, and Guaviare are joined. The place is little more than a collection of rubber-hunters' huts. It was credited with a population of about 400 in the last national census of Venezuela, but it is the largest settlement in the entire region and owes its existence to its location at the meeting point of three waterways and its proximity to a fourth—the Ventuari. A channel connects the Atabapo and the Orinoco behind the town, making it practically an island; the Imiridi and the Guaviare enter the Atabapo opposite the settlement, the contrast between the white waters of the Guaviare, the black, clear stream of the Atabapo, and the muddy Orinoco being very noticeable. San Fernando is the capital of the Territory of Amazonas and the seat of the governor, the court of the first instance, and minor offices, whose personnel constitute an appreciable proportion of the permanent population.

In old colonial times the upper Orinoco basin included some of the best-known, as well as some of the least-explored, districts of the entire territory. The old Jesuit mission station of Esmeraldas (longitude $65^{\circ} 40'$ W.; latitude $3^{\circ} 11'$ N.) marks the limit of the attempt at civilization. Esmeraldas, situated above the Casiquiare Canal, has been visited in modern times by travelers, and the constant explorations of the rubber prospectors have furnished some information about the river and its immediate neighborhood as far as San Fernando de Atabapo. In Humboldt's time Esmeraldas was a flourishing settlement, but to-day nothing remains but a few huts. The falls of Guahtaribo are about 120 miles above Esmeraldas; but the ferocity of the Guahtaribo Indians has discouraged exploration in this direction. Only one man has ever claimed to have reached the source of the Orinoco.

The Atures Rapids, the largest on the Orinoco, form an effectual barrier to through steamer communication with the upper river, a difficulty formerly obviated during the heyday of the rubber trade by the construction of the now disused wagon road between Pericos (Zamuro) and Salvajitos above the rapids, a distance of 14 kilometers (1 kilometer=0.62 mile).

Humboldt described the Atures and Maipures Rapids as "a countless number of small cascades succeeding each other like steps." His description continues:

The "raudal" (the Spanish term for this kind of waterfall) is formed by an archipelago of small islands and rocks, which so contract the bed of the river that its natural width of more than 8,500 feet is often reduced to far less, the navigable channel being only 20 feet in width. At the present day the eastern side is far less accessible and far more dangerous than the western.

It was with surprise that the fall of the Rapids of Maipures was found to be only 30 or 32 feet; the foaming surface several miles in length is intersected by masses of black rock crowned with trees.

A canal might be opened between the Cameji and the Toparo, which would become a navigable arm of the Orinoco, and supersede the dangerous bed of the river.

The raudal of Atures is exactly similar to that of Maipures, consisting of a cluster of islands, between which the river forces its passage for some 18,000 to 24,000 feet. * * * Rocks, like dikes, connect one island with another. In one place the water shoots over these dikes, at another it falls into their cavities with a deafening hollow sound. In some places certain portions of the river bed are dry, in consequence of the stream having opened for itself a subterranean passage.

The old Compañía de Navegación Fluvial y Costañera concession provided for the construction of a steam or electric railway to provide a land connection between a proposed service of Upper River steamers and those of the Lower River below Atures.

On the right bank of the Orinoco above the rapids, in the region of the small rivers Sipapo and Cataniapo, are the hills forming the watershed between these rivers and the Ventuari. In this region live the Piaroa Indians; the term appears to be a general one, including branches of the Maipures, Atures, and other tribes. The country inland is unexplored.

Near the river and at intervals throughout the regions are found grassy plains, or savannahs, and in the forest surrounding these open places are vast numbers of rubber trees (*Hevea guianensis* and *H. brasiliensis*). The wild rubber has been exploited to some extent, not always with proper method, but the production of the district is far below its possibilities. Cultivated-rubber plantations do not exist. The lack of development is due to the lack of population; all the available labor works at rubber gathering in season. Near San Fernando de Atabapo there exists a small Brazil-nut (*Bertholletia excelsa*) plantation, but enormous quantities of nuts rot on the ground in the forest. There are also wild cacao groves along the river in several places.

Mineral resources are also said to exist. Indians show samples of copper, iron, manganese, and even gold. The rocks of the exposed places in the falls show mineralization signs in many places. Copper is reported on the river bank below Pericos.

The 46 miles of clear water between the falls of Maipures and Atures is navigable for steamers during the greater part of the year. Above Maipures there is no serious hindrance to navigation, even through to the Amazon by way of the Casiquiare Canal to the Rio Negro.

The Ventuari is the largest of the tributaries of the upper Orinoco, yet some 300 miles of the stream are unknown to white men. As far as the valley has been explored, alternating forests and grass-covered plains are to be found. Scientists claim that the geological formation of the entire region to the east is the same as that of the Guiana highlands, the floor being of the same granite as that of the Roraima Hills and the Callao gold fields. It seems justifiable to suppose that the same pre-Cambrian sediments formed the mountains, and it may be found that Mount Duida, which is visible to the northeast from Esmeraldas, and the ranges toward the Guianas are pierced by those dikes and sills which elsewhere in the Guianas are often accompanied by gold and other ores. In the old colonial days a trail ran from Esmeraldas to the Lower Orinoco by way of the Caura;

the route lay up the Padamo and then across the headwaters of the Ventuari to the source of the Erewato, a tributary of the Caura. Along this road the Spaniards maintained a chain of forts for a distance of 50 leagues. A runner could make the distance from Esmeraldas to the mouth of the Erewato in 12 days.

At the point where the Rio Guainia forms the Rio Negro, as the stream is called on the Amazon side of the low watershed, is the village of Maroa, the seat of government of the Rio Negro district. The Guainia being a deep, clear ("black") stream, the sky cloudless, and mosquitoes absent, the climate is fairly good. The forests of the Guainia and the Rio Negro are comparatively little known, but some rubber is collected along their banks. The old settlement of San Carlos on the Rio Negro below the junction of the Casiquiare Canal is now abandoned, and there are no settlements before the hill known as the Cerro del Cucuhy, which marks the Brazilian frontier, is reached.

During the old days of the rubber trade, this vast region was better known and more developed than it is to-day. Venezuela has great areas still undeveloped along the Caribbean seaboard for which the Government is endeavoring to attract European immigration. It is doubtful whether the great Orinoco country will be developed, unless some gold strike should attract prospectors and miners, as was the case with Alaska. Any attempt at settlement would involve great hardships, on account of the heat, insect pests, etc., to say nothing of transportation difficulties. Under present conditions, the rubber gatherers retire down the river to the settlements and to Ciudad Bolivar between seasons, and the permanent population is very small. (For a more detailed account of the conditions in the Orinoco River basin, see the section on rubber, p. 309.)

CLIMATE—FLOOD STAGES OF LOWER ORINOCO.

The hydrographical and meteorological station at Ciudad Bolivar has rendered excellent service in the collection of climatic data during the last few years. The maximum temperature (average) in the shade is 32.2° C. (92° F.) with 40.5° C. (105° F.) in the sun. The minimum temperature averages 24° C. (75.2° F.) in the shade. The relative humidity is 87° to 91°. The prevailing wind is the northeast trade, without which the region would become almost uninhabitable.

The average flood height on the Orinoco is 12.36 meters (1 meter = 3.28 feet) for the year at Ciudad Bolivar; the highest monthly average being 2.18 meters, registered usually in the months of July, August, and September, during the heaviest part of the annual rainy season, which begins in April. The most rapid rate of flood is 0.25 meter per hour, and the average 0.15 meter per hour. From October to December the waters gradually recede, the average rate of recession being 0.056 meter per day and the highest rate 0.11 meter per day. The highest monthly rate of flood (4.39 meters) occurred in May, 1916.

It is known that heavy rains occur in the remote regions of the upper Orinoco much earlier than at Ciudad Bolivar. Flood waters have been received at Ciudad Bolivar in April, so it was concluded

that heavy precipitation had occurred in March in Amazonas Territory.

GENERAL SURVEY OF STATE OF BOLIVAR.

Much of what has been said of the Territory of Amazonas would apply to the general description of the Federal State of Bolivar.

The Orinoco forms the northern boundary of the State, separating it from the more northern States of Monagas, Anzoategui, and Guarico. The southern boundary line is that with Brazil and the Federal Territory of Amazonas. The boundary on the east is the Federal Territory of Delta Amacuro, and British Guiana; and on the west, the State of Apure and the Federal Territory of Amazonas. According to the official data published in October, 1916, the population of Bolivar was 68,757 and the total area is 238,000 square kilometers (1 square kilometer=0.386 square mile), giving a density of population of 0.3 per square kilometer. The State of Bolivar and the Territory of Amazonas are by far the largest of the Venezuelan political divisions.

The State of Bolivar is divided into 5 districts and 18 municipalities. The town of Caicara is the capital of the district of Cedenó. It has about 1,200 inhabitants and is situated on the right bank of the Orinoco, 346 kilometers (1 kilometer=0.62 mile) from Ciudad Bolivar. The population of the district is 3,847. The largest district in population is that of the capital of the State, Ciudad Bolivar, with 21,582 people, according to the national census of 1891. Upata is the capital of the district of Piar, with more than 10,000 people. Upata is situated in the interior, distant 90 kilometers from the port of San Felix (on the Piacoa Channel, south of Barrancas). The town has a population of about 5,000 people, and is on the overland route to the El Callao gold fields and Guacipati. Guacipati is the capital of the district of Roscio, which has about 13,000 inhabitants. Moitaco is the capital of the district of Sucre, which has about 8,000 inhabitants. It is situated on the right bank of the Orinoco not far above Ciudad Bolivar in the region of the great Sicapra Mesas that lie on the north shore.

The other principal towns of the State, all of which are commercially tributary to Ciudad Bolivar, are Tumeremo, El Callao, El Palmar, and San Felix. Tumeremo, in the district of Roscio, distant 270 kilometers overland from San Felix, has a population of 6,000. The town is located on the Yuruari River to the south of the El Callao gold fields and is of greater importance than Guacipati. Its trade is principally with Georgetown in British Guiana via the Yuruari River. El Callao grew up around the gold mines when these were being worked extensively 20 years and more ago. It now has about 2,000 people, their occupation being principally gold mining and placer washing on a small scale. El Palmar in the district of Piar, 180 kilometers overland from San Felix, has a population of about 1,500. San Felix is a port of entry only, situated on the Orinoco at the point of junction of the Caroni, 110 kilometers below Ciudad Bolivar. The place has a population of about 1,000.

As an interesting comparison of the size of the State of Bolivar, of Venezuela, it may be mentioned that it covers about the same area as Portugal, Greece, and Denmark combined. These countries have a

population of about 15,000,000; the State of Bolivar has less than 70,000.

The capital, Ciudad Bolivar, or Angostura (latitude $8^{\circ} 8' 52''$ N.; longitude $63^{\circ} 33' 17''$ W.), fourth in importance of Venezuelan ports, is situated on the right bank of the Orinoco, 370 kilometers by river from Barimas Point (Mocomoco Point) at the entrance from the sea to the Carosimia channel of the Orinoco. The elevation above sea level is 36 meters (1 meter=3.28 feet).

CIUDAD BOLIVAR.

The national census of 1891 gave Ciudad Bolivar a population of 17,535; the estimated population on June 30, 1915, was given officially as 21,595. This number included the entire population of the municipality, the city proper containing possibly 15,000 people. It is estimated that about 6,000 men are engaged in the rubber and forest-products industry for which Ciudad Bolivar is the headquarters, and these men, or most of them, make their homes in the city during the period between seasons in the forests. Work in the forests is carried on during the wet season of the year, from April to October. The same season applies, for the most part, to the work in the gold-bearing rivers and reefs. The two industries are the basis of the commercial activity of the district.

The foreign colony of Ciudad Bolivar includes many nationalities of widely different character and origin. The merchants are mostly Corsicans, Germans, and Syrians, with a few Italians. The peon element and small rubber or chicle contractors are represented by Venezuelans from the district of Roscio, State of Bolivar (a very small number), from far-away Maracaibo, Caracas and the Federal District, from the Valencia district, and from the eastern Venezuelan seaboard and Cristobal Colon region. There are also Negroes from the West Indies (principally Trinidad), East Indian coolies, Negroes from British and Dutch Guiana, and a sprinkling of Syrians, Italians, and Corsicans.

The whole business element is actuated by the spirit of adventure, stimulated by the far horizon of the great hinterland of the Orinoco. As a result of a rich "strike" on some hitherto unknown gold-bearing stream, or a good season in rubber or chicle, after the discovery of a new natural plantation of the trees, a small fortune may be made in a few months. The well-known method of "grubstaking" has been adopted by the merchants, and by means of it they control the output of forest and placer products. Together with the great risk of loss goes the factor of large margin of profit and the chance of enormous gains at one stroke.

Needless to say, this spirit of adventure is not conducive to constructive nor conservative methods; it leads rather to exploitation for immediate greater gain. Ciudad Bolivar may be likened to a Western mining camp in a mining rush; only over it hang the heat and humidity of the Tropics.

Founded in 1764 by the then governor of the Orinoco Province, the city is located on a granite hill 118 feet above sea level, on the right bank of the Orinoco. The original name was San Thome de la Nueva Guayana, to distinguish the place from Guayana Vieja down the river. This name was later changed to Angostura from

the fact that the river here narrows down to 800 meters, thereby causing the rise in the river to be most felt at this point in the rainy season. There is a gradual descent from the high ground behind the town to the waterfront, where there is a good street recently paved and modernized by the progressive State government. This thoroughfare is the principal business and residence street. During the day the granite formation on which the town is built seems to absorb the heat, rendering the atmosphere very oppressive during the night. The mean annual temperature is 86.6° F. With the exception of San Fernando de Apure, shut in by its surrounding hills, Ciudad Bolivar is the hottest place in Venezuela.

The customs district of Ciudad Bolivar includes the ports of San Felix, formerly called Puerto Tablas; Barrancas, about 80 miles below Ciudad Bolivar near the Rio Vagre outlet; Tucupita, on the Rio Vagre; Soledad, just opposite Ciudad Bolivar, on the Orinoco; and Uracoa, on the river of that name, a branch of the Rio Vagre, this place being more or less tributary, commercially, to Barrancas. Barrancas and San Felix are ports for exports only, all imports being cleared at Ciudad Bolivar and distributed by river traffic from there. All the ports named are ports of both inward and outward shipment for coastwise traffic. A special permit is required to allow passengers to disembark at any of these ports without first having visited Ciudad Bolivar. Prior to the decree of July 1, 1917, Barrancas and San Felix were ports of both import and export. It takes 8 hours by steamer each way to go from San Felix to Ciudad Bolivar, and 9 to 10 hours from Barrancas.

Port of Spain, Trinidad, is the point of transshipment in and out, and more Ciudad Bolivar business is transacted there than in the capital of the country, on account of its greater proximity and more rapid means of communication.

Ciudad Bolivar has an electric-lighting plant, an ice plant in connection with a brewery (Cerveceria de Ciudad Bolivar), one club (Club del Comercio), two hotels, two garages, six drug stores, one printing establishment, and one newspaper, El Luchador. At the time of this investigation, eight lawyers, three dentists, and ten doctors constituted its professional personnel. A river dyke has been built for the protection of the exposed side of the town from the river, new intercommunication bridges have been constructed, and the principal street has been repaved with cement. Attention is also being given to more work on the country roads. Upata has two automobile transport concerns engaged in overland passenger traffic during the dry season between San Felix, El Palmar, Guacipati, and El Sallao. There are about 60 light automobiles in use in and about the capital, and cars can be obtained for trips across the country.

RIVER PORT OF SAN FELIX.

The river port of San Felix, called Las Tablas, is situated on the right bank of the Orinoco just below the mouth of the Caroni, about 80 miles below Ciudad Bolivar, and is the port of entry for the most populous districts of the State, lying east of the Caroni; i. e., Heres, Piar, and Roscio. From here the wagon trains climb the plateau behind the town and travel overland 90 kilometers (1 kilometer=0.62 mile) to Upata, from there 150 kilometers to Guacipati, capital

of the district of Roscio; from there 25 kilometers to El Callao; and from there 60 kilometers to Tumeremo—a total distance of 325 kilometers. The route passes through numerous small villages and towns, of which those named are the largest.

San Felix has its customhouse, a hotel, and a telegraph office. The customs administration is under Ciudad Bolivar jurisdiction. The freight paid in San Felix for transport to and from the interior points named amounts to more than \$200,000 annually, and, in the boom times of the El Callao gold fields, it reached approximately \$1,000,000. The British Government maintains a consular agency at San Felix.

FALLS OF THE CARONI—WATER-POWER RIGHTS AND RELATED PROJECTS.

The falls of the Caroni, near San Felix, have been famous since the days of Raleigh. The river comes from the slopes of the Sierra Pacaraima, on the boundary with Brazil, and travels as a comparatively quiet stream until very near its junction with the Orinoco. The falls have a sheer drop of 60 feet over polished granite and present enormous possibilities for hydroelectric-power development. In December, 1919, the Venezuelan Minister of Fomento (Development) agreed to grant a concession to an American for the water-power rights of the falls of the Caroni and for the construction of an electric railway from the Orinoco to the El Callao gold fields. The matter was submitted for approval at the 1920 mid-year meeting of the Venezuelan Congress, but the failure of the prospective concessionaire to appear or to provide for adequate representation caused the matter to be postponed indefinitely.

Much might be said in favor of this scheme solely as a local development; the most attractive feature, however, is the evident possibility of opening the practically abandoned El Callao gold fields. From 1871 to 1892, when it became involved in endless litigation, the El Callao Co. (English) paid £1,933,288 (\$9,408,346) in dividends. In 1884 it extracted 177,055 ounces of gold. There is every reason to believe that the region contains vast mineral wealth in gold-bearing gravel, sands, and reefs.

Outside of the tropical climate the country to be crossed presents no difficulties to the railway builder except a few low places that are flooded during the wet season. In the dry season the trip has been made by automobile from El Callao to Ciudad Bolivar, via the crossing at Guri (also spelled Gury) on the Caroni above the falls, in 12 hours' running time. A narrow-gauge line would not prove costly to construct. The initial investment for the power plant at the falls would, of course, be high, but the power could be utilized at the mines, where enormous areas of low-grade gold-bearing ores are known to exist. The Caroni, and its main tributary, the Paragua, have gold-bearing sands also, and there are many scattered mining districts where hundreds of men, women, and children make their living by washing for gold in small quantities, employing the most primitive methods.

On account of the tropical climate, any undertaking of this nature would have to be carried out on a scale sufficient to permit the establishment of sanitary camps with modern medical equipment.

The Government is well-disposed toward any project to develop transportation and mining in this region. Moreover, the forests, not yet exploited on account of the excessive cost of transportation of foodstuffs in, and products out to the river, would be made more accessible and the work stimulated. There is also the possibility of live-stock development. Fairly large steamers of 1,500 and 2,000 tons come up the river as far as Ciudad Bolivar to load live beef cattle for French Guiana, and there is an increasing market in nearby Trinidad and also in Cuba and Porto Rico. (See also section on "Labor conditions.")

To large companies interested in developing large bodies of low-grade ores this region presents an opportunity worthy of careful study and appraisal. There are great deposits of high-grade iron ore farther down the river at Imataca, easily approachable for steamers of 3,000 tons' burden.

TRANSPORTATION.

There are no railways in the Ciudad Bolivar district. The Orinoco River and its tributaries form the principal means of communication to and from the great area of the interior.

RIVER TRANSPORTATION.

In Venezuela and Colombia a "navigable" body of water is not always navigable for power vessels; it may be navigable only for the dugout canoe of the natives, and that very often only at high water, during and following the rainy season of the year. Under such interpretation there are few streams of the entire Orinoco system that are not navigable for greater or less distances.

Steamer service is maintained by the Compañía Anónima Venezolana de Navegación. The old company, the Compañía de Navegación Fluvial y Costañera, was sued by the Government in 1916 for noncompliance with contract, the Government claiming that the company had failed to clean out certain channels and do specified dredging work in Lake Maracaibo and certain rivers, and that the vessels of the company failed to fulfill conditions of adequate service. The old company had two ocean-going steamers in the coastwise trade, two steam shallow-draft launches on the Orinoco, and five steamers and auxiliary vessels on Lake Maracaibo. Under the old concession the Government paid the company a monthly subsidy of 20,000 bolivars (\$3,860), and it enjoyed the exclusive right of navigation and steamer service on Lake Maracaibo and the Orinoco River and along the coast. Following the suit by the Government the company was reorganized and renamed.

Besides the vessels of the coastwise and Lake Maracaibo fleets, those of the Orinoco service are as follows: *Delta* (309 tons), service between Port of Spain, Trinidad, and Ciudad Bolivar, weekly; river steamer *Apure* (191 tons) and river steamer *Alianza* (147 tons), both operating between Ciudad Bolivar and San Fernando de Apure on a more or less regular schedule; river steamer *Arauca* (71 tons); river steamer *Amparo* (41 tons); and river steamer *Boyaca* (31 tons), all operating from Ciudad Bolivar up the Orinoco and its tributaries. There is also the auxiliary pontoon *Vencedor*, used as a repair shop, etc.

The Orinoco route proper takes in the following towns: Palmar, Moitaco, Maria Luisa, Mapire, Las Bonitas, Caicara, and Cabruta. The first port of call on the Apure is the village of Aricuna; then follows San Fernando de Apure, the most important settlement in the entire territory above Ciudad Bolivar. On the Apure follows Apurito, at the junction with the Rio Apurito, really a continuation of the Guarico; then Catalina, the river shipping point for distant Guanare, capital of the State of Portuguesa; then Puerto Nutrias, the second town of importance next to San Fernando de Apure; then Palmarito; and, last of all, Guasqualito, at the head of steamer navigation on the Rio Apure. This route covers more than 500 miles of river navigation. The upper reaches of the Apure are traveled only by three small river-type boats in the wet season when there is sufficient water. Frequent rapids, rocks, sand and mud bars, and the changing course of the river make traffic extremely slow and tedious and also costly. On account of the difficulties of navigation, the irregularity of the freight offerings (which are greatly dependent upon seasonal conditions), and other factors, a regular schedule is impossible.

Continuous service is maintained, except in years of unusual low water in the Orinoco, from Ciudad Bolivar to San Fernando de Apure, and up the Orinoco as far as the Rio Meta.

The lower Orinoco division includes the seasonal navigation of the Rios Cojedes, Portuguesa, Guanare, and Arauca. The Rio Portuguesa division begins at the entrance of the Portuguesa just opposite San Fernando de Apure at Puerto Miranda. The first village is Camaguan, then La Union, at the junction of the Guanare Viejo; then Guadarrama, at the junction of the Rio Guanarito Viejo. Half-way between Guadarrama and El Baul the Rio Portuguesa turns sharply to the west and navigation follows on up the Rio Cojedes as far as El Baul. Starting at La Union, on the Portuguesa, the Guanare is navigable as far as Arismendi. The Portuguesa is also navigable above Guadarrama, passing Florida, to San Lorenzo, distant only 22 miles overland from the capital, Guanare; and it is over this route that most of the products of the district, principally tobacco, are shipped out to market in Ciudad Bolivar. The Rio Arauca division begins at Alcala, the river stations being San Rafael, Yagual, Chiricoa, El Viento, and Amparo. The last named is an important river port at the head of steamer navigation on the Arauca. It lies just south of Guasqualito on the Apure, and, like the Apure, receives trade by canoe traffic from the Colombian border.

The next tributary of the Orinoco, included in the upper-river division of navigation, is the Rio Capanaparo, navigable as far as the small villages of Lagunola and San Francisco. The Meta is navigable as far as Apostadero, to which place steamers from Ciudad Bolivar ascend for rubber and hides. The last station on the upper Orinoco is Pericos (Zamuro), just below the falls or rapids of Atures.

River transportation is a matter of seasons and the condition of the rivers. From June to November the larger river steamers, carrying cargo of about 150 tons, operate regularly between Ciudad Bolivar and San Fernando de Apure, the upstream journey taking 10 days and the downstream trip 6 days, as a rule. The time of travel

on the tributaries can not be consistently recorded, since the smaller 30 and 40 ton stern-wheel launches pick up freight and passengers when and where offered, much time is lost loading wood for fuel, and the rivers themselves often present impediments to navigation, such as sand bars, mud banks, and tree snags, the pilots being obliged to follow the drift of the current. The channels change with every flood season, and the boats can not run at night except on the lower river below San Fernando. The two small launches operate as far up as San Fernando de Apure during almost the entire year. Activity on the upper reaches of the Orinoco, Apure, Arauca, Meta, etc., is dependent upon the rainy season and the movement of the rubber gatherers and their camps. The rainy season lasts from April to November.

The *Delta*, running between Ciudad Bolivar and Port of Spain, Trinidad, furnishes the connecting link between the city and the outside world. The running time is two days each way, and one round trip is made each week.

The river passenger fare from Ciudad Bolivar to Guasdalito, at the head of navigation on the upper Apure (Rio Sarare), is 262 bolivars (\$50.57 at normal exchange) for the up-river trip and 231 bolivars (\$44.58) for the down-river trip. Other river fares are in proportion. Passengers provide themselves with their own sleeping arrangements—hammock or camp bed, sheets, towels, toilet articles, etc. For a long river trip certain items of food also should be carried to eke out the limited and poorly prepared and served cuisine of the boats. Mosquito bar and other means of protection against insects are necessary likewise.

FOREIGN STEAMER SERVICE.

During the wet season the Welcome Steamship Co. (Ltd.) operates a monthly service up the Orinoco as far as Ciudad Bolivar and connects with the ports of Demerara, Paramaribo, Cayenne, and Port of Spain. The French steamer *Bienvenida* operates between Ciudad Bolivar, San Felix, and Barrancas in the live-cattle trade with French Guiana (Cayenne). The ocean-going vessels that come up to Ciudad Bolivar average about 1,500 tons' burden.

Passengers to and from Ciudad Bolivar usually plan to make connections at Port of Spain and use the foreign steamer lines that run along the Caribbean between Trinidad and Colon, Panama. There are also the two vessels of the Venezuelan Navigation Co., which make all coastwise ports between Port of Spain and Maracaibo. At present, with all the old steamer lines in operation again after their practical suspension during the war, very good connections for Ciudad Bolivar can be made, as there is a Spanish, Dutch, French, Italian, or British boat at least once a week from Curaçao, Puerto Cabello, or La Guaira (Caracas) to Port of Spain or return. Not more than one week's delay would be experienced in Port of Spain in getting a boat for Ciudad Bolivar.

OVERLAND TRANSPORTATION.

The principal overland route is that connecting San Felix with Tumeremo—325 kilometers (1 kilometer=0.62 mile)—the distance by road to the El Callao gold fields being 265 kilometers. The

normal freight rate between San Felix and Tumeremo is about 100 bolivars (\$19.30) for each 100 kilos. At times of bad rainy seasons, disease among the draft animals, or extraordinary demand, this rate has been as high as \$40, which was paid in 1912 and 1913. This road is kept in a fair state of repair by the State government. Overland transport to other parts of the district is enormous in cost. Tracks through the forests and jungles have to be cut ahead of the pack animals by peons swinging machetes and axes. This must be done for the transport to the river outlets of the season's product of rubber, balata, chicle, etc. It is impossible for the State government to open and care for these roads, which penetrate entirely unpopulated regions for great distances, since the areas of forest activities are constantly changing with the advance into the forests of the gum exploitations carried on by small and large contractors. Off the wagon road from San Felix or away from a navigable stream, transportation is dependent upon the pack animal, and for this service oxen are universally used. Mules are scarce and high priced on account of the ravages of the climate.

Merchandise proceeds southward from San Felix packed in four-wheeled wagons drawn by three or four yoke of oxen, similar to the prairie schooners of the old West in the United States; or in small, two-wheeled, one-mule carts like those so much used in other regions of Venezuela. These vehicles bring back the products of the region, hides and balata, some rubber and chicle, and the small amount of gold now produced. The 325 kilometers to Tumeremo may take two weeks to two months, according to the season of the year, the condition of the draft stock, etc. Prior to the energetic administration of Gen. Gomez and his able lieutenant, Gen. Marcelino Torres García, governor of the State of Bolivar, little attention was paid to road construction or repair, the route remaining a mere wagon track through the forests and sandy plains of the uplands above the river levels. There were stretches of swampy ground where wagons became bogged in deep mudholes for days at a time.

Passengers make the trip on riding mules, the distance to Guacipati being covered in two and one-half days of actual time in the saddle. The road passes through Upata, capital of the Piar district, which is about one long, hard day's ride from San Felix. After climbing the mesa back of the river the road runs across a stretch of sandy, open ground, with a few trees, for about one and one-half or two hours of riding, when the edge of the forest is reached. Seven hours are needed by the rider, if not impeded by baggage pack animals, to traverse this forest, and Upata is reached after two hours more of hard riding over open grassy plains. Upata has a hotel, a telegraph office, and some small stores.

After leaving Upata the road crosses the Orinoco-Cuyuni watershed and comes out of the hills onto open plains used as cattle ranches, with small villages here and there, before the capital of the Roscio district, Guacipati, is reached. The distance between Upata and Guacipati is 15 hours' hard riding, the usual saddle traveling time being two days. Native travelers take four to five days in reaching Guacipati from the river at San Felix. Guacipati was at one time the center of the balata industry, large quantities of the gum being obtained from the neighboring forests. But the careless and waste-

ful custom of chopping down the trees instead of tapping them has destroyed the industry, and this, together with the decrease in mining activity of El Callao, only 25 kilometers away, has hurt its trade. There are evidences here, however, of more commercial movement than at Upata.

El Callao is situated on the right bank of the Rio Yuruari, being built on and around the site of the famous mine of the same name which had been worked since earliest times by the Indians. The whole region is auriferous and many old workings exist at Caratal, Tupuquen (the site of the old Spanish mission), Callao Bis, Mocupia, etc. Free gold was extracted from a depth of about 20 feet. Various mills were erected during the boom days of the early eighties.

Away from the auriferous district there are great expanses of savannahs, which are divided into cattle ranches. There are also small sugar-cane plantations. In colonial times this region was the most developed. Trade was carried on with what is now British and Dutch Guiana, the route being up to the town of Cura, then the most important commercial center in the region. The old Dutch traders were also active here. The old Spanish settlements are marked to-day by the ruins of the towns at Tupuquen, Carapo, Sicapra, and Cura. At Cura there was a bridge over the Yuruari, the only one recorded in the entire region. About one day's ride south of El Callao is the town of Tumeremo, now the center of the balata industry of the great forests that stretch to the south and to the west toward the Caroni.

Along the Caroni for 50 miles from its mouth there are great cattle plains, and good highland country is found all the way to the bend of the Paragua, the principal tributary of the Caroni. Ciudad Bolivar merchants have been interested in the gold washings of the river recently, and camps have been gradually established at the sites of the old Capuchin missions.

Above Ciudad Bolivar the Orinoco flows smoothly between the plains on the north side and the granite hills and savannahs on the south side, until Moitaco is reached, about 72 miles from Ciudad Bolivar. Just above Moitaco there is a huge bend in the form of an S, containing many islands, where the current is swift and increases in strength as the Boca del Infierno is reached. Here the whole stream rushes through a narrow gorge with such force as often to drive back river steamers. Beyond this hindrance to navigation the river becomes wide again, but it has many rocks and islets.

The Caura, like most of the tributaries of the Orinoco, flows through savannahs for the last 40 or 50 miles of its course; but the country is broken by groups of hills with belts of trees along the river. There are a few small settlements in the region. Considerable rice is grown here for the Ciudad Bolivar market. Little is known of the upper reaches of the Caura, but in the forests of this region the tonka bean, called "sarrapia," grows to perfection, and also the balsam of copaiba. About 130 miles from the mouth of the Caura are the fall of Para, with a total descent of about 200 feet, according to André, the author of the only authentic account of the upper Caura. Above the falls the Caura is called the Merevari. The chief tributaries of the Caura on the west bank are the Rio Micare and the Rio Erevato, above Para, once colonized by the early missionaries,

and afterwards on the route of the overland trail to the upper Orinoco, previously mentioned.

The Cuchivero, which enters the Orinoco 15 miles below the river town of Caicara, is much smaller than the Caura, but it is better known on account of the cattle ranches that are being developed in the region. The waters of the Guanaimo, a tributary of the Cuchivero, are said to be affected by the quantities of sarsaparilla that grow along its banks. The region is one rich in rubber, copaiba, quinine, mahogany, and other valuable forest products. Traces of gold, cinnabar, and silver have been found in the hills.

Travel in the entire Orinoco Valley is far from pleasant. There are myriads of mosquitoes, sand flies, and grass ticks to contend with, as well as many other insect pests. During the rainy season the humidity is very high, and during the dry season the effect of the northeast trade wind is felt throughout the flat country along the lower river and the nights are often chilly on account of the heavy dews.

The trip between Caracas and Ciudad Bolivar, via Valencia and the overland route has frequently been made by light automobile to San Fernando de Apure, a distance from the German railway at Cagua of more than 200 miles, and then down the river by steamer. This journey, however, which takes about 12 days, can be accomplished only during the dry season. The llanos can not be traversed by automobile or wheeled vehicle during the rainy season on account of their flooded areas, resembling the "pampas."

Salesmen take in Ciudad Bolivar from Port of Spain, Trinidad, in passing to or from the east coast of South America or covering the Caribbean territory.

AGRICULTURE.

Not much can be said for the agricultural development of the district. The population is too small, and the principal industries have always been the gathering of forest products and the mining of gold, with even cattle as a subordinate consideration, though there are many large areas of suitable cattle lands in the district and live stock requires less labor than any of the other industries of the country.

It may be instructive to contrast the productivity of Bolivar with that of the State of Falcon, which is considered to be the most arid and sterile in the Republic. In spite of the rich soil of Guiana, the abundant rainfall, and the excellent natural conditions, as compared with the smaller area and lack of moisture of Falcon, the Bolivar district does not produce sufficient agricultural products to feed itself. The State of Falcon has 24,800 square kilometers (1 square kilometer=0.386 square mile) of surface, as compared with the 238,000 square kilometers of the State of Bolivar. Falcon has 139,110 inhabitants, while Bolivar has 68,757. Falcon produces corn for export to Curaçao, and its total production of foodstuffs amounts to 42,380,000 kilos (1 kilo=2.2046 pounds), but Bolivar produces only 4,720,000 kilos of agricultural foodstuffs, or only about 68 kilos per capita—not sufficient to feed its own people. Rice, flour, and canned goods are imported from the United States.

However, agricultural production has been increasing of late years since the industry has been stimulated by official action, and it may

be predicted that enough rice will soon be produced to satisfy the domestic demand.

The following figures, representing averages for the years 1915-1918, show the total agricultural production of the State of Bolivar:

	Kilos.
Coffee.....	77,623
Cacao.....	5,060
Brown sugar.....	1,054,772
Rice.....	806,842
Tobacco.....	6,975
Corn.....	1,483,973
Beans.....	216,593
Other products—yucca, bananas, etc.....	1,067,395
Total.....	4,719,238

Production in the various districts of the State was as follows:

	Kilos.
Piar (capital, Upata).....	2,145,903
Sucre (capital, Moitaco).....	1,161,479
Heres (capital, Ciudad Bolivar).....	813,842
Cedeno (capital, Caicara).....	535,674
Roscio (capital, Guacipati).....	62,340

The classification of the above production by districts is as follows:

Districts.	Cacao.	Sugar.	Rice.	Corn.	Beans.	Coffee.	Tobacco.	Others.
	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.	Kilos.
Cedeno.....	3,532	285,873	245,165	1,104	.....	.....	127,370
Heres.....	257,460	156,110	251,510	18,392	.....	.....	652,323
Piar.....	5,060	638,200	96,664	605,131	61,927	77,623	6,975	3,000
Roscio.....	48,300	.....	11,040	.....	.....	.....	284,702
Sucre.....	107,280	263,195	371,132	135,170	.....	.....	.....

As has been said, the commercial houses of Ciudad Bolivar are absorbed in the business of collecting and selling forest products. Without any guaranty other than the personal honesty of the contractor, about 15,000,000 bolivars (\$2,900,000) are advanced annually to the men engaged in the collection of rubber, balata, balsam of copaiba, sarsaparilla, tonka beans, etc.; and, however honest these workers may be, the forest industry is subject to many difficulties. Seasons with too much or too little rain affect the yields of the forest areas; often laborers can not be recruited in sufficient numbers to exploit a given area; the concessions granted by the Government may not contain enough accessible trees producing the desired product; and there is always the chance of sudden market-price reductions. The productive forest areas are increasingly distant from their transportation outlets because of the lack of conservation and systematic exploitation, and, during the dry season of the year, the 6,000 or more men engaged in the forest work do not take up other occupations, such as that of farming, even on a small scale. Both the National and the State Governments have taken every means to stimulate interest in agriculture in the district. Prizes are offered for the largest harvest, seed is distributed free of charge, and experts of the Ministry of Fomento (Development) have been

sent to study methods and to institute a proper system in the forest work, which heretofore, has always been carried on in a ruinous manner (ruinous, so far as the future is concerned, on account of the great destruction of the wealth-producing trees).

LIVE-STOCK INDUSTRY.

Before the war lard was imported from the United States; now, although not enough is produced in the district to supply the needs of the people, sufficient quantities to satisfy the demand are imported by coastwise vessels from the other ports of Venezuela.

There are many areas in the district more or less fitted for cattle raising. The entire immediate region of the Orinoco is reasonably suitable for cattle, and the plains stretch away to the north as far as the Coast Range of the peninsula of Paria and the Carupano region. Between Upata and Guacipati there is a region of savannahs; the Caroni and the Caura have suitable areas, also. However, although the industry was developed from the time of the Spanish colonization, it was also the first to suffer during the various internal disturbances from which the country has suffered in the past.

According to a census taken in October, 1918, there were 700 stock owners in the five districts, possessing 126,739 beef cattle, 5,854 horses, 434 mules, 3,067 burros, 3,258 hogs, and 4,484 goats. A few of the wealthier owners have imported Cebu bulls for crossbreeding, and there is increasing interest in the cattle industry, with some discussion of a new packing house for chilled beef to be located at Barrancas.

The cattle suffer from diseases, however, and one has always to combat the tropical climate and its attendant conditions. During the rainy season large surfaces of the lowlands along the rivers are inundated and become filled with water growth, which afterwards rots and causes sickness among the cattle which follow the green feed along the receding water lines.

On the higher plains, away from the rivers, there is generally scant feed for the cattle during two seasons of the year. The natural grasses are coarse and hard when dry, and the cattle have abundant feed only during the first period of the rainy season, after which the plains are partly flooded, the stock being forced to migrate from elevated "island" to "island." There is also a good period following the recession of the waters, but the plains are soon scorched by the sun and the cattle are forced to congregate along the watercourses, where they find green feed. The solution is the planting in fenced pastures of some artificial pasture grass, such as the well-known Para or the guinea. Ticks are also very troublesome, and dipping pens should be arranged.

The Bolivar district of Venezuela has long been the chief source of the beef supply for the island of Trinidad, British West Indies, the cattle being shipped by steamer and slaughtered locally. (See p. 111.) British Guiana possesses similar cattle lands, which, however, are less accessible to transportation than those of Bolivar, being far removed from the coast and the navigable river leading to the principal seaport. In 1919 two companies were formed to develop the cattle industry of British Guiana for the Trinidad market, it being planned to supply about 50,000 head for the export trade

within a few years. In the meantime Bolivar continues to export live cattle to Trinidad and French Guiana.

These cattle are shipped principally from Ciudad Bolivar and the port of Barrancas, below Ciudad Bolivar, the number shipped annually averaging about 3,620 head from the former port and 1,470 from the latter, if one estimates the average weight on the hoof at point of shipment at 950 pounds, which is the usual export weight for Venezuelan cattle. The port of Barrancas also ships about 700 head per annum to French Guiana, and an average of 3,240 head of live beef cattle to the British island of Barbados.

The average declared-export value per head is given as 108 bolivars, or \$20.84; but this figure does not represent the value of fattened steers of this class in the Bolivar district, where the average price is around \$45 per head.

Exports of dried or "jerked" beef are very small, amounting to only 2,000 pounds per annum, though there is a rather large local business in supplying such meat for the camps.

Exports of dairy products consist of about 30,000 pounds of cheese, which is taken principally by Trinidad, 75 per cent of the amount being shipped from Ciudad Bolivar and the remainder from Barrancas.

FOOD PRODUCTS EXPORTED TO TRINIDAD.

In spite of the low agricultural production in the Bolivar district the demand for foodstuffs in Trinidad has stimulated considerable export business in corn, beans, and sugar. During the year 1919 Ciudad Bolivar, Barrancas, and San Felix exported to Trinidad 958 metric tons (1 metric ton=2,205 pounds) of corn, valued at 210,186 bolivars (\$40,566), of which amount Barrancas furnished 762 tons.

During the same year the district exported to Trinidad 23 metric tons of beans, valued at 10,103 bolivars (\$1,950).

Barrancas also sends large quantities of bananas and plantains to Trinidad as a staple food product, shipments amounting during 1919 to 159,140 kilos, valued at 22,020 bolivars (\$4,250).

MINING.

The gold fields of the El Callao region were worked by the Indians from the earliest times and undoubtedly furnished the basis for the legend of the mythical city of Manoa, which was current in Europe during two centuries of New World discovery and which was the leading inducement behind a number of expeditions, such as the two of Sir Walter Raleigh.

The same geological formation exists throughout the Guiana highlands and the mountain ranges of the Sierra Pacaraima, Sierra Uriuana, and Sierra Parima, and explorations have determined its continuation, in a more or less regular character, through to the west along the region of the headwaters of the Caroni, Paragua, and Caura Rivers. The Guahibos inhabiting the western slopes of the Parima Range near the source of the Orinoco are known to have gold, and most of the smaller tribes of Indians who trade along the Orinoco with the rubber camps bring in small quantities. Manganese, copper, and iron are known to exist in widely scattered regions.

GEOLOGY OF DISTRICT.

The Guiana highlands include all the vast region in the eastern part of the State of Bolivar, bounded by the Orinoco on the north, by British Guiana on the east, and by Brazil on the south, amounting to about 204,000 square miles. They are formed of the oldest rocks in Venezuela and also represent one of the oldest land surfaces of the world. The great elevated plateau from which rise the peaks and mountain chains of Guiana appears everywhere to be composed of the same or similar rocks—gneisses, hornblende, schists, and granites, all containing evidence of great geological antiquity. This formation has been called by geologists the "Guiana complex" and is considered as more or less equivalent in age to the Lewisian gneiss of Scotland, and therefore one of the oldest members of the Archean system. As L. V. Dalton says:

Traces of the agencies of erosion are seen in the present form of dikes of quartz-porphyrries and felsite, which were once forced in a molten condition into crevices and joints of the then less solid deposits.

After the cooling of these intrusions and wearing down of the whole mass by atmospheric influences, the movements of the earth's crust produced a shallow sea or series of lakes over what is now Guayana, and in these waters a series of beds of red and white sandstones, coarse conglomerate, and red shale were laid down to a depth of about 2,000 feet. Later this area was again elevated into dry land, the sediments were consolidated, and again veins or dikes of basalt, dolerite, and similar dark, heavy rocks in molten condition forced themselves into the fractures of gneisses and sandstones alike. These sandstones are here named the Roraima series, from their occurrence in that mountain, and they now remain in isolated peaks or chains of hills all over Guayana, which, since the far-off period when the series was first consolidated, seems to have been always dry land.

The points at which the Roraima beds have been left as upstanding masses of horizontally stratified material, in place of being completely denuded from the ancient foundation of gneiss, appear to have been determined in many cases by the exceptional accumulations of molten igneous rock, which has hardened and remained as a cap to protect the softer sandstones below from the effects of atmospheric weathering. Where this has been the case, the strange vertical-sided, flat-topped mountains of Guayana are the result.

Gold is generally found along the later intrusive dikes, the smallest dikes being the richest, while most gold is found where a basalt intrusion crosses one of the older ones.

HISTORY OF GUAYANA GOLD FIELDS.

Although this district was undoubtedly the source of the gold seen by the early navigators who touched the Guayana coast, the "conquistadores" did not make any discoveries in this region, and it was not until the establishment of the old mission at Tupuquen on the Yuruari (south of what is now the town of Guacipati) in the early part of the eighteenth century that the gold fields became known by the discovery of the ancient crude placer workings of the native Indians of that region. The work done by the missionaries was very indefinite, and it was not until 1842, when the region was visited by the Brazilian, Pedro J. Ayres, that the existence of extensive gold fields was made known. It was not until 1849 that crude washings were established along the Yuruari and in the valley of the Anacupay. By 1875 there were 400 men engaged in the work, the production of that year, as officially reported, reaching 1,500,000 bolivars (\$289,500). The greater part of this production was in placer dust, but there were also nuggets of quartz origin, among these being one of 250 ounces and another of 24 ounces.

Until the year 1859 the methods employed were very crude, on account of the ignorance of the people of the region and the entire lack of capital for machinery and modern equipment with which to crush the quartz and pump the shallow shafts. The gravel and sands were washed by hand in wooden pans.

In 1860 the Venezuelan Government passed favorable mining legislation so as to attract mining companies, and in that year the first stamp mill, similar in design to those used in California, was imported and installed on the "Buen Retiro" claim, which, however, was finally abandoned as a failure. Numerous other companies were formed and erected mills in the region, and some of them still are continuing operations, notwithstanding the great difficulties encountered in the high cost of transportation, the ravages of the climate, difficult and costly labor supply, etc.

It was first thought that the formation containing the gold was purely alluvial and that the supply of the metal did not originate in the immediate region. It was afterwards proven that gold was contained in the veins of quartz which everywhere cross the formation in this region (El Callao).

The Rio Yuruari marks the dividing line between two distinct divisions of the formation, the northern side being dominated by granite rock, while the southern division, where the gold mines are found, is characterized by basalt, according to Attwood, and by diorite, according to Naissant.

The massif of the mineralized region is composed almost entirely of this amphibological rock, the diorite, called "bluestone" by the miners on account of its bluish-green color. There are also rocks of secondary importance, such as quartzite, seen in many places, and a rock of basaltic structure, the outcroppings of which are most noticed in the bed of the Mocupia.

The gold of Guiana originates nearly always in quartz veins that are incrustated in the diorite and are not clearly seen on the surface in their original form on account of atmospheric disintegration and erosion. The diorite presents itself under many different aspects. When it is traversed by the gold-bearing quartz veins, it frequently carries gold itself in paying quantity, but when this occurs the rock is found to be very hard.

From the diorite the veins pass to an upper cap consisting of a claylike mass derived from the diorite; this is greasy to the touch and its hardness increases with the depth, which is from 100 to 150 feet, and in some places as much as 300 feet. In this cap the gold-bearing quartz veins disappear. This cap extends almost throughout the entire region, but not always with identical characteristics. Its aspect and nature change with the conditions of its bed; on top it is generally earthy, more homogeneous and less clayish, and more red in color than lower down; it has been observed that its colorization is always in direct relation with the degree of mineralization of the neighboring formations. From yellow, alongside of the poor quartz veins, it becomes a bright red or ochre in the neighborhood of the gold-bearing veins, the colors being produced by the disintegration of the oxide of iron.

The gold-bearing quartz veins never appear in their original state in this cap formation; they are more or less altered and even pul-

verized and poorly mineralized; at times even the richest show small traces of gold, and in the others the metal disappears altogether. The gold values can not be determined by testing the float or sands of the streams or wash, but are found in the veins farther down in the solid diorite formation that lies underneath, at a depth of 100 to 300 feet.

The alterations suffered by the construction of the formation in the mining region, to a certain depth, are not equally severe in all of the district. In the higher elevations, the alterations suffered by the diorites, quartz, and other formations, and consequently the effect on the richness of the veins, has been less accentuated, and it has been possible to work the veins from their outcroppings, as was the case with the "Panama" mine, which produced ore running 3 and 4 ounces of gold to the ton from veins situated on the slope of the hill, while properties lower down in the bottom of the valley did not show values until a depth of 100 or 120 feet had been reached.

The veins of these mines have been known to reach a width of 9 to 10 feet in some places, but are usually small, narrow veins. They usually run in two directions—some north and south (these being considered the richest, as has been shown in the case of the El Callao Mining Co.) and the others east and west (with less mineral, but containing workable values).

The gold itself is found in five different forms—gold intimately mixed with other minerals; general sulphur combinations, coming under the heading of pyrites; fine native gold, visible with the glass; flour gold; and large nuggets. As in all gold regions, there is found a great abundance of iron pyrites, and some of the richest of the ores have been thrown away on account of the inability of the companies to separate properly the values contained. It is known by experience that when the ores extracted contain a kind of hornblende, even in small quantity, their values are very low, or nil. The history of the region has been that values have nearly always increased with depth, although the width of a vein is no indication of its richness. The pyrites content also increases with the depth.

The richest ground worked ran, on an average, 14 ounces to the ton; other rich mines gave an average of 3 to 4 ounces to the ton, but most of the veins worked gave an average of 1½ ounces to the ton.

Records from 1866 to 1914 show a total production of 80,990 kilos (1 kilo=2.2046 pounds) of gold from the El Callao field, the amount being 469 kilos in 1866 and gradually increasing to 7,042 in 1884, after which it declined to 849 kilos in 1914. These figures do not include the years of 1886, 1892, 1893, 1894, and 1895. The figures from 1904 to 1914 have been taken from the official records of the Ciudad Bolivar customhouse and include the gold exported in the form of bars and dust. In addition there were exported placer concentrates weighing 21,597 kilos, valued at 298,758 bolivars (\$57,660). Giving the kilo of gold produced by these mines an average of 3,000 bolivars (\$579), it may be estimated that the Guayana gold fields have produced, up to 1915, the enormous sum of 265,000,000 bolivars (\$51,145,000).¹

¹ Following the same system of calculation, it may be said that the Guayana gold fields produced 2,343 kilos of gold in 1915, 2,441 kilos in 1916, 1,100 kilos in 1917, and 858 kilos in 1918, or 6,743 kilos more than the above figures indicate.

"EL CALLAO" GOLD MINE.

The major portion of this production belongs to the El Callao mine. This mine, unknown in 1865, began work in 1870, with a capital of only 120,000 bolivars (\$23,160), divided into 12 shares of 10,000 bolivars each; in 1872 the company increased its capital to 322,000 bolivars (\$62,146); and later, in 1882, without new assessments on the shareholders, the capital was raised to 32,200,000 bolivars (\$6,214,600), the old shares being converted into 32,200 new shares of 1,000 bolivars (\$193) each.

The history of the production of the El Callao mine is interesting. It reached its zenith in 1886, after which its production decreased on account of the gradual decrease in values carried by the vein, which was lost suddenly in 1887 at a depth of 250 meters (1 meter = 3.28 feet) in a great mass of quartzite—in spite of which the company continued to work the property and pay dividends, but at the expense of the pillars left in the mine and by working old ore that had been previously thrown on the dump.

Following are figures for the El Callao mine production, taken from authentic records of the company:

[Bolivar—\$0.193.]

Years.	Ore crushed.	Gold bars.	Average per ton.	Value.
	<i>Tons.</i>	<i>Ounces.</i>	<i>Ounces.</i>	<i>Bolivars.</i>
1871.....	515	3,219.60	6.25	278,633
1872.....	2,300	8,226.67	3.57	712,319
1873.....	3,051	12,308.00	4.03	1,063,838
1874.....	3,963	17,187.68	4.33	1,544,590
1875.....	11,859	31,278.83	2.63	3,048,640
1876.....	12,419	42,542.06	3.42	4,169,256
1877.....	11,685	48,168.58	4.12	4,778,688
1878.....	9,673	49,638.88	5.13	4,892,519
1879.....	11,894	40,308.54	3.38	3,897,127
1880.....	18,624	54,013.71	2.90	5,260,723
1881.....	24,978	72,254.62	2.89	6,970,219
1882.....	22,406	105,396.08	4.70	10,150,535
1883.....	24,750	134,362.68	5.42	12,941,689
1884.....	30,936	177,655.16	5.72	17,076,190
1885.....	47,223	114,454.07	2.42	10,963,943
1886.....	73,708	181,040.20	3.45	17,285,148
1887.....	66,167	73,863.71	1.11	7,187,008
1888.....	54,152	52,598.73	0.97	5,040,281
1889.....	57,310	52,971.35	0.92	5,144,802
1890.....	53,057	49,439.95	0.93	4,784,103
Total.....	540,672	1,320,329.09	.....	127,060,091

From 1875 to 1890 the El Callao Mining Co. paid in dividends a total of 49,203,400 bolivars (\$9,496,256); in 1886 it paid 11,012,400 bolivars (\$2,125,393) out of the total production of the mine amounting to 17,285,148 bolivars (\$3,336,034).

After 1890 the company continued to work the low-grade ore on the dumps, and put 60 stamps on custom work for the neighboring properties; some of these made good profits, milling as much as 2,000 tons per month with a gold yield of 3 to 7½ ounces to the ton. Many of the old dumps were also worked over by local merchants and private companies.

The great fame of the El Callao mine produced a fabulous demand for its shares, which were quoted on the London and Paris markets at as high as 2,200,000 francs (\$424,600) per share.

The exploitation of these rich gold deposits gave rise to two very distinct effects—one favorable, since they enriched the shareholders of the rich properties and filled the region with prosperity, and the other adverse, because the very richness of the mine gave opportunity to expend exorbitant sums in the working and other services of the property. Thus the cost of milling 1 ton of ore gradually became 225 bolivars, or the equivalent of $2\frac{1}{2}$ ounces of gold, when it is a well-known fact that under existing conditions the extraction should not have cost more than 50 bolivars (\$9.65) per ton of ore mined and milled, including all expenses and even the amortization of the capital. In the Transvaal the total expense does not exceed \$4.80 to \$5.80 per ton of ore milled.

Another feature of the extravagant management was the harmful effect on the other less important mining properties. It is a well-known fact that the average yield of gold from the various veins of the region is 1 to $1\frac{1}{2}$ ounces per ton. These other properties could not continue to compete with the El Callao company for labor and supplies, nor pay comparable salaries and other charges, and still operate at a profit, working their lower-grade ores.

It is true that in 1887 the cost per ton was reduced to 71 bolivars (\$13.70) and later to as low as 40 bolivars (\$7.72) in the "Colombia" mine, and again to 37 bolivars (\$7.14) in the "Remington" mine, proving that the vein matter of this region could be mined and milled as cheaply as in the Transvaal; but this took place after "El Callao" had failed because of the loss of the vein, and after the mistaken idea had been implanted in the district that a vein, in order to be commercially valuable, had to have at least a width of 4 to 5 feet and run $2\frac{1}{2}$ ounces of gold to the ton.

The low-grade ores and tailings were thrown away, and no plant was installed to treat pyrites ore, not amalgamable with mercury plates. It was estimated that an average of 1.750 kilos (1 kilo = 2.2046 pounds) of gold were lost daily during the working of the "El Callao" mine, and in 1883 the consulting engineer declared that the mill tailings carried an average of \$12.54 to the ton. More recent assays of these tailings showed an average of $3\frac{1}{2}$ pennyweights of gold to the ton (1 pennyweight = 1,557 grams), worth in Venezuela 16.36 bolivars (\$3.157). No cyanide plant was installed by the company.

Labor charges have since decreased by at least 75 per cent in the region and transportation (overland from the river) has also lowered in cost.

One of the principal factors of the high cost of operation in this field has been that of transportation between the field and the Orinoco River. During the period of greatest prosperity of the "El Callao" mine many plans were advanced for the construction of a railway from Piacoa (below San Felix) to El Callao—a distance of about 180 kilometers (1 kilometer = 0.62 mile) over savannahs, with few accidents of topography—but nothing ever came of them. Overland transport from the river is fairly easy during the dry season of the year, but almost impossible during the rainy season. Freight on machinery reached the high figure of 800 to 1,200 bolivars (\$154.40 to \$231.60) per ton.

GOLD-MINING COMPANIES.

Up to the year 1915 the number of gold-mine concessions in Venezuela granted by the Government was 74, of which 73 belonged to the El Callao district (State of Bolivar) and one was in the State of Miranda. Of the 73 mines in Bolivar, only 28 are producing revenue for the National Government (3 per cent of the gross production), and of these only 15 were in operation at the time of the writer's investigation. Of these latter, the following are the most important properties:

The New Callao Gold Mining Co. (British) holds the properties of the old El Callao Co., the capital being given as £300,000 (\$1,459,950). Use is being made of the old machinery and equipment, only 30 stamps being in daily operation, in connection with a small cyanide plant for the tailings of the mill. The vein being worked runs northeast by southwest and it is worked from a shaft 485.5 feet deep, from which there are four drifts on the vein, the first being at a depth of 173.8 feet from the surface. The new company milled 2,253 tons of ore in 1913, which produced 20,300 grams (1 gram = 0.03215 Troy ounce) of gold. The cyanide plant treated a total of 20,956 tons of tailings, which netted 70 kilos (1 kilo = 2.2046 pounds) of gold.

The Goldfields of Venezuela (Ltd.) (British) own various concessions (among them the property known as "La Providencia"), covering in all a surface of 301.83 hectares (1 hectare = 2.47 acres). Work was suspended in July, 1913. Operations from April to June, 1913, showed a total of 1,625 tons of ore milled, which produced 41.442 kilos of gold, or 0.85 ounce per ton.

The Amparo Mining Co. (Ltd.) (British) owns the concession known as "La Paz," covering 150 hectares. A new stamp mill was completed in 1914 and a cyanide plant was being installed.

The El Dorado Rubber, Balata, & Gold Mining Co. (Ltd.) (British) possesses the placer concession called "Perseverancia," of 400 hectares, the vein property known as "San Carlos," of 200 hectares, and another placer property called "La Hechicera," also of 400 hectares. On another vein property of 280 hectares this company has recently installed a new mill with a capacity of 15 to 25 tons per day of 24 hours, and other machinery is being brought in for the other properties mentioned. The company has a capital of 3,300,000 bolivars (\$636,900) and is also active in the exploitation of large forest concessions of rubber and balata.

"*Lo Increible*," capitalized in Venezuela with native capital of 2,000,000 bolivars (\$386,000), divided into shares of 25 bolivars (\$4.825) each, owns valuable claims within 5 kilometers (1 kilometer=0.62 mile) of El Callao. Operations were begun in 1914, and a total of 13,379 tons of ore had been crushed up to May, 1915, yielding 8,974 ounces of gold, or an average of 0.671 ounces per ton. The cost of the initial operation was given as 52.14 bolivars (\$10.06) per ton of ore mined and milled.

In 1918 12 companies were engaged in mining gold, all in the El Callao district of the State of Bolivar, the total production being officially stated at 712,007 grams; fully one-third of this production was credited to one company, the New Callao Gold Mining Co. (Ltd.). The gold output, according to official figures, was 958,304 grams in 1917. During the year 1919 (the latest period for which official statistics are available) Ciudad Bolivar exported a total of 1,843,008 bolivars' (\$355,701) worth of gold, weighing 764,442 grams, of which the United States received 469,642 grams, France 62,000 grams, and Trinidad 225,000 grams. In 1917 exports of gold amounted to 902,501 grams, valued at \$533,919.

The total value of gold exported from all Venezuela in 1917 was 4,681,705 bolivars (\$903,569), of which the United States received 4,523,934 bolivars (\$873,119), with the remainder going to Trinidad. In 1918 the amount was 2,348,915 bolivars (\$453,341), of which the

United States received 1,625,181 bolivars (\$348,558) and France 344,661 bolivars (\$66,520), Trinidad getting 379,073 bolivars (\$73,161).

"Lo Increible" mine is located 8 miles northwest of El Callao. By the end of 1918 a total of 40,000 tons of ore had been crushed, yielding an average of over $\frac{1}{2}$ ounce net per ton, with $\frac{1}{4}$ ounce remaining in the tailings. The plant consists of a 20-stamp mill, using a 20-mesh screen. The cyanide plant was being installed, with 25,000 tons ready for it on completion, and new viens were being prospected for better ores.

The Cicapra district, about 25 miles northeast of El Callao, made a sensation 10 or 15 years ago as a result of the discovery of a succession of rich surface pockets containing coarse gold, found in the grass roots among the low hills bordering the Cicapra River, a tributary of the Yuruari. The gold was found in decomposed schist. A portion of this district is now being exploited by a Venezuelan company with its headquarters in Caracas, known as the *Compañía Yuruari*. A small clamshell dredge with a capacity of 200 cubic yards per day has been put on the ground, which has been prospected with a churn drill, with the result that some millions of cubic yards of gravel have been laid out, carrying an average of \$1 per yard, which, it is thought, can be worked at a cost of \$0.50 per yard.

There are two French companies operating in the Cuyuni-El Dorado district, which embraces the extreme southeastern part of Venezuelan Guiana, and in this section are also located the properties of the El Dorado Rubber, Balata & Gold Mining Co. (Ltd.). Several thousand ounces of gold are produced in this section annually by crude hand washing carried on by the natives.

(NOTE.—For more details regarding the imports and exports of gold of Venezuela, see page 381.

LABOR CONDITIONS IN GOLD FIELDS.

Labor conditions in the gold fields are constantly being disturbed by the rumors of rich strikes like that in the Venamo Valley on the borders of British Guiana in December, 1911, and it is almost a weekly occurrence to see entire families starting out with pan, pick, and shovel to try their fortunes in some new discovery.

Labor is obtained from the West Indies, for the most part, and wages average 5 bolivars (\$1.16) per day, though skilled labor has to be paid much more—indifferent pipe fitters, donkey men, etc., getting as high as 16 to 20 bolivars (\$3.09 to \$3.86) per day. Food is scarce and expensive, especially in the new outlying districts to which it has to be packed in on mules or oxen, with the climatic conditions very bad indeed. No large camp could long exist without modern medical organization against the prevalent malaria.

As a rule the average natives (mostly Negroes and mulattoes) much prefer to mine and wash gravel on their own account, averaging a few cents per day and living in hopes of a rich strike of some pocket. They are experts at "gouging" out the softer crevices in the reef formations with their pointed steel bars, which they use in preference to the common pick, and they also know the "pinta," or colors indicating better values, etc.

METHODS PREVAILING IN INDUSTRY.

The early attempts to develop the region seem to have been carried out in a very careless manner. Mills were put up by recently floated companies on any rich strike, and when the veins were worked out the properties were abandoned without much effort to locate and prospect new ground. Among the many companies that have been floated from time to time may be mentioned the Nacupai, Chili, Potosí, Unión, Victory, and Chocó. However, one of the old companies, the Goldfields of Venezuela (Ltd.), has been systematically engaged in absorbing many of the old holdings, and modern methods are being adopted under the direction of a manager with many years of experience in the peculiarities of the region.

In view of the large area over which many bodies of low-grade ore are to be found, it would appear that the future of this mining district depends upon the development of transportation from the Orinoco River. A railway could be operated by ample water power, and the route presents no very great engineering difficulties.

GOLD PRODUCTION IN CIUDAD BOLIVAR DISTRICT BY COMPANIES.

In the following table there is given the 1919 production of gold exported through the Ciudad Bolivar customhouse by each company now operating in the district:

[Gram=0.03215 troy ounce; bolivar=\$0.193.]

Name of company.	1919			
	First half year.		Second half year.	
	Grams.	Bolivars.	Grams.	Bolivars.
Cara al Sol.....	24,157.95	70,058	17,844.57	51,740
Riqueza.....	26,330.60	76,359	19,292.75	55,949
Alto Cuyuni.....	17,892.18	51,887	12,379.10	35,899
Bélgica.....	4,650.00	13,485	7,750.00	22,475
Quebrada de Oro.....	3,248.00	10,044		
Goldfields of Venezuela.....	124,159.00	372,476	122,210.00	368,360
Nueva Panama.....	29,371.00	88,113	20,809.00	62,427
El Marne.....	4,650.00	13,485	7,750.00	22,475
El Diamante.....	2,790.00	8,091	7,750.00	22,475
Cuyuni.....	9,788.00	29,364		
La Salvación.....	1,550.00	4,495	7,750.00	22,475
Free ground, placers, etc.....	168,922.28	496,253	156,692.56	462,215
New Callao Gold Mining Co.....			1,357.00	4,071
La Paz.....			35,558.55	106,687
Total.....	417,609.01	1,234,110	417,143.53	1,237,257

NOTE.—Reduced to customary American units, the total for the year was 26,837.9 ounces, valued at \$476,974 United States currency.

IRON DEPOSITS OF IMATACA.

Various deposits of iron ore have been referred to in the descriptions of the imperfectly known parts of the country, but the only deposit that has attracted the interest of capital is that of Imataca in the foothills of the range of the same name in the Delta Amacuro territory, on the banks of the Cano Carosimia. The veins are numerous and extensive, and in 1901, 700 tons of the ore were shipped to Baltimore, where it was described as being magnetic, with 60 to 70 per cent

of pure iron content. The main deposit is known as Imataca, but there are also neighboring "mines" called "Tequemdama," "El Salvador," "Nicaragua," "La Magdalena," "El Encantado," "Costa Rica," and "Yucatan." A concession was granted by the Government on August 14, 1911, to the Canadian-Venezuelan Ore Co. (Ltd.), of Halifax, Nova Scotia, which included the right to establish a customs station for export only and to handle the imports of the company at Nueva Angostura (Imataca) in order to avoid the long trip up to Ciudad Bolívar to clear customs business.

In 1912 this company exported to the United States a total of 12,100 tons of ore, valued at 217,800 bolívares (\$42,035), and in 1913 exports totaled 56,975 tons, valued at 930,550 bolívares (\$179,596). The ore is described as being a crystallized hematite, containing 68 to 69 per cent of pure iron, 2 to 3 per cent of silica, 0.2 to 0.4 per cent of moisture, and traces of phosphorus, sulphur, and titanate acid—having all the properties of a fine Bessemer ore. The ore in the form of limonite is found also, but these deposits are of too costly extraction and too low grade to permit of their commercial exploitation.

The work accomplished by the company uncovered two large parallel veins, running generally east and west, with a variable incline from the horizontal of 86 to 88 degrees, with a thickness of 4.5 and 2.4 meters (1 meter=3.28 feet), respectively. Work was begun on an outcropping distant 2,500 meters from the dock, about 60 tons per day being extracted. There is also a vein 4,180 meters from the same loading dock that has a width of 18 meters on an average and 25 meters maximum, and that has been estimated to contain 4,000,000 tons of ore down to the water level. The daily rate of extraction was 300 tons in 10 hours.

The Canadian-Venezuelan Ore Co. (Ltd.) was capitalized at \$4,347,500, divided into shares, with 6 per cent first-mortgage bonds, due in 1927, outstanding to the value of \$1,000,000. The equipment installed in 1911 and 1912 included four steam boilers with a total capacity of 1,000 horsepower, a large steam turbine, air compressor and air-drill equipment, lines of railway for ore transport, and an automatic loader at the dock with a capacity of 300 to 500 tons of ore per hour into the vessel.

The concession included all of the known iron deposits of the region, in return for which the company was to pay the Venezuelan Government 20 cents per ton, in addition to an initial payment, until \$385,000 had been paid, and 10 cents per ton thereafter. The enterprise was presumably unsuccessful, as the company became involved in litigation in 1913 and liquidated. The magnificent equipment has since been taken over by the Venezuelan Government and has been transferred to the coal mines of Naricual (Barcelona) and the port of Guanta, which are operated by the National Government.

It is estimated that 75,000 to 90,000 tons of ore can be shipped monthly from these veins, which are situated about 75 miles up the river from the mouth of the Orinoco. However, sand bars at the mouth of the river impede the navigation of the stream by vessels of more than 1,500 tons burden during all of the year. It is interesting to note that these iron deposits were first worked by George Turnbull, of New York, about 25 years ago. The chief difficulty encountered in the working of these mines seems to have been that of the tonnage limitation imposed by the draft of the river, the

vessels capable of landing at the mines being too small to handle the ore economically in large bulk shipments in competition with other producing centers. Other difficulties are, of course, those inherent in the conditions of the country—the tropical climate, scarcity of labor, etc.

FOREST PRODUCTS.

The commerce of Ciudad Bolivar is dependent upon the exploitation of the natural products of the forest, collected over territory that may be said to extend 500 miles or more inland to the west and southwest, and 200 miles to the south. Its position at the head of deep-water navigation on the Orinoco makes it the natural center of the trade for the entire Orinoco system.

The forest products collected at the port constitute at least 80 per cent of the exports, and the market conditions with respect to these articles of export naturally affect the trade and economic condition of the entire region of which Ciudad Bolivar is the commercial and financial center. There are two other important factors of wealth in the district—(1) the gold production of the Venezuelan Guiana fields and (2) the cattle industry, the export of beef cattle and hides forming a considerable item in comparison with other annual totals.

The forest products, in the order of their importance, are: Balata, rubber, tonka beans ("sarrapia"), chicle, balsam of copaiba, sarsaparilla, cebadilla ("sabadilla"), and sernamby, a kind of rubber.

There are also many kinds of valuable woods, including the red and white cedar (called "Spanish cedar" in the American market), *lignum-vitæ*, vera, greenheart, etc., and a number of dyewoods, such as "brazil" (*Haematoxylon Braziletto*), otherwise known as "campeche" (Mexico), and logwood (*Haematoxylon campechianum*). One finds also the "mora" and fustic (*Chlorophora tinctoria*), yielding a well-known yellow dye, which has been exported to France. The bark of the onatillo, or "ontillo" (*Vismia ferruginea*), yields a reddish resinous substance, which slightly resembles (and can be used in the same manner as) gamboge, while the bark of the amarillo (*Aspidosperma vargasi*) contains a yellow dye. Except for small shipments of cedar logs to Trinidad, no lumber or dyewoods are exported from Ciudad Bolivar on account of the lack of sufficient labor and the great distances and difficulties of transportation; attention is concentrated on other products of the forest that are more easily secured and transported. Some mahogany has been brought out from the Delta Amacuro.

There are also 27 known plants capable of producing dependable dyes, among these being the "fruta de Tina," "sangrito," "quarema," "añil silvestre," and "concha de corona"; the first produces a deep purple color, the second a red, the third a purple, the fourth a blue, and the last-named a blue also. Medicinal plants are found in great abundance. Many of these, as well as the dye plants, are known and used by the Indians of the district. With the exception of "sabadilla" for flavoring use and the sarsaparilla root, none are gathered and exported commercially.

FINE HARDWOODS.

The forest zones of Venezuela contain many varieties of commercially important woods, but their classification by areas is limited

to the accessible regions. Mahogany is found throughout the basal belt of the country from sea level to elevations around 1,000 feet, but it has been exploited commercially only in the region of the Lower Orinoco and Lake Maracaibo. Germany and France were the best customers for Venezuelan wood exports, but this trade has been completely disorganized by conditions brought about by the war, and the United States, now Venezuela's best market for other items of export, takes only certain limited kinds, in spite of the great variety that might be offered if a market were created.

A great many of Venezuela's fine woods are exceptionally well suited for fine cabinet work, veneering, etc., but are practically unknown to buyers in foreign markets. Modern industry, established on a scientific basis, requires scientific classification of raw materials, and heretofore most of the fine woods exported from Venezuela, and others that might be exported, have been known only by purely local names, differing in the various regions of the country in which the woods are found. Many of these woods are also found in other Latin American countries. For example, a certain wood may be exported from Honduras under a local name by which it is known in the foreign market consuming it. The same wood may exist in merchantable quantities in Venezuela, but be known under an entirely different local name. When an inquiry arrives in Venezuela giving the market name it is answered that no such wood exists in the country and thus an opportunity is lost.

Following are short descriptions of woods that might be exported from the Ciudad Bolívar district:*

Amarillo (Aspidosperma Vargasii C.DC.).—Called locally "naranjillo" and "limoncillo." Formerly exported to Europe but in small demand to-day. Used as substitute for box for xylograph work, graduated scales, rulers, etc. Found principally in the drier reaches of the forest and in the valleys of the coast. The wood is of clear color, heavy and hard.

Caoba (Swietenia Candollei Pittier).—Known as "Venezuelan mahogany." Exported principally from Maracaibo, but found throughout the country, including the Delta Amacuro, where it is more or less accessible to water transport. Venezuelan mahogany figures third and last in the list of commercial mahogany in foreign markets, being next to "Santo Domingo" (*Swietenia mahoganii L.*), which is the real mahogany and should not be confused with the so-called Venezuelan species. Central American grades (*Swietenia macrophylla*) are also more valuable than Venezuelan mahogany.

Cedro Amargo (Cedrela Glasiovii C. DC.).—This is one of the best woods of tropical America and has long taken in Venezuela the place that pine and oak have in the United States and Europe. It possesses great durability, resistance to the attacks of wood-destroying insects and to the effects of heat and moisture, a hard but easily worked surface, and light weight (density, 0.40–0.60). In Venezuela it is used very extensively in cabinet and furniture work, interior fittings, etc. The tree has been confused with the *Cedrela odorata* of the Antilles, which belongs to the group of sweet cedars, not found as yet in Venezuela. It grows well at all elevations up to 1,200 feet above sea level, but prefers high and dry mesa and hilly lands.

Ebano (Caesalpinia Ebano Karst and C. punctata Willd.).—Exported from Maracaibo until 1917, when shipments ceased. One of the finest of tropical hardwoods. Color varying from dark black to reddish brown, and heavily grained. Specific gravity, 1.15, according to Ernst.

Guayacan (Guajacum officinale L.).—The lignum-vitæ of commerce. Very fine grained, heavy, and compact.

Mora (Dimorphandra excelsa (Schomb.) Baillon.).—This is a wood of the Delta Amacuro of the Orinoco and of Guiana and should not be confused with the dyewood of the same name. The weight of 1 cubic meter is 1,050 kilos.

*Taken from "Esbozo de las Formaciones Vegetales de Venezuela," by Henry Pittier.

Its brilliant black and yellow coloring makes it valuable as a fine cabinet wood and for inlay work.

Viruviro (*Nectandra Rodiei* (Schomb.) Mez.).—The "greenheart" of the English and American markets; principally exported from British Guiana, but also found in merchantable quantities in Venezuelan Guiana. None is exported as yet. Used in naval construction, etc.

The port of Maracaibo leads in the exportation of timber from Venezuela to foreign markets. The other areas of timber production are in the State of Yaracuy, the outlet being the Rio Yaracuy, and the State of Lara, operations being carried on along the Rio Tocuyo.

The difficulties of lumber exploitation in the entire Bolivar district are, of course, related to the general shortage of labor and the greater ease with which other forest products, such as rubber, balata, etc., can be procured.

RUBBER.

Ciudad Bolivar is the chief port in Venezuela for the exportation of rubber. Fifteen years ago the annual production of the country was calculated at about 70,000 kilos (1 kilo=2.2046 pounds), and this production increased rapidly, the annual average from 1913 to 1918 being 180,800 kilos. Considerable quantities of rubber also leave the country by the route of the Rio Negro and the Amazon, outside the control of the Venezuelan customs authorities.

There are no rubber plantations of note in the country, the product exported being from the natural plantations of the forests. Various species of the *Hevea* family ("euforbiaceas") are found in Venezuela. At least two of them (*H. brasiliensis* (H. B. K.) Muell.-Arg.) and (*H. minor* Hemsl.) are indigenous to the region, and the first named has been successfully cultivated. The plant requires swampy lands, a deep clayish soil, always moist, and a temperature never less than 18° C. (64.4° F.).

Numerous other plants produce kinds of rubber in Venezuela. There are a number of lianas and reeds of lactiferous character that merit investigation; it is known that the hancornia or mangabeira, producer of an important amount of rubber in Brazil, is one of the Venezuelan lianas, and there is also the "jazmin falcon" (*Allamanda cathartica*). Among the trees, special attention is merited by certain species of *Sapum*. Several years ago there was universal interest in Venezuela in the cultivation of the "castilla" tree, known as the Central American rubber tree, which was thought to be a large producer of the valuable gum and could serve at the same time as the necessary shade tree for the coffee and cacao plantations. But the investigations of the United States Department of Agriculture in Central America and southern Mexico had shown this species to be of small value as a rubber producer, and its value as a shade tree was also negligible, with the result that a number of good coffee and cacao plantations were ruined.

"Sernamby" is the name under which an inferior grade of crude rubber is exported, the word having been borrowed from Brazil. In the Venezuelan statistical records it represents the inferior and most impure grade of crude rubber.

AREAS OF PRODUCTION.

It has been shown that the rubber plant is found in commercial quantities throughout the entire Orinoco Basin. The work of gather-

ing the gum has been carried on for years along the rivers of the Orinoco system, but there has been little regard for systematic exploitation, and the more easily accessible natural plantations have been gradually destroyed by the careless and mischievous method of chopping down the producing trees in order to obtain a greater immediate yield, rather than a regular annual production. In a few cases, large firms heavily interested in the rubber trade have carried out systematic exploitation under a strict policy of conservation, but these examples have been rare in the district. Back from the navigable rivers there are undoubtedly great areas of rubber territory in a virgin state which have not been touched as yet and which will become productive when better prices and greater organization in the industry make their exploitation possible.

The center of the balata industry was once the town of Guacipati, but the destruction of the trees has caused the field to move to the south and southwest, and the center is now Tumeremo, 265 kilometers (1 kilometer=0.62 miles) from the river port of San Felix and 85 kilometers south of Guacipati, with the rubber fields still farther in the interior and receding year by year as the barbarous method of destruction advances.

Studies made recently of the rubber and balata industry in the Bolivar district prove that it is only a question of time, if the present methods are continued, until the industry will practically disappear, as the productive regions will become too far removed from transportation to be profitable.

It is also very doubtful whether an organized attempt to cultivate rubber on a large scale would prove successful, in view of the present conditions in the district. There is a lack of sufficient labor and the workers have long been accustomed to the free and easy exploitation of the forests in a haphazard manner, or to a more or less nomadic life following the gold diggings in the Guiana district. Large numbers of workmen would have to be recruited in the West Indies, whose surplus labor is already supplying the cane fields of Cuba and Porto Rico, the banana plantations of Costa Rica and Colombia, and the labor at the Panama Canal. The only solution would be the bringing in of coolie laborers from the Orient in order to be in a position to compete with Java and Sumatra and other rubber-producing countries of the East, which have an enormous supply of very cheap labor right on the ground. Similar attempts at rubber development have failed in the Patia River region of Colombia for the same reason—lack of labor—since the people available easily supply their small needs through intermittent activity in the forests near at hand and the gold washings of the neighboring streams.

Production for the next few years will depend largely upon price and market conditions.

METHODS AND CONDITIONS OF INDUSTRY.

The region of the headwaters of the Orinoco has been called, with reference to the rubber industry, a land of greater promise than the upper reaches of the great Parana, better known as the Rio Machado, one of the larger affluents of the Rio Madeira. Three months are required to travel from Ciudad Bolivar to the rapids of Guahibos, far above the mouth of the Casiquiare and above the old

mission site of Esmeraldas. The river is unknown above this point. There are trading stations on the Orinoco beyond the mouth of the Ventuari, the Indians of the region being the Maquiritari Tribe.

The cost of transportation from Ciudad Bolivar to the Upper Orinoco is enormous; the distance is very great; there are many falls, and portages have to be made around the rapids. There is no regular system of transportation beyond the Apure River, steamers making the trip from the port to the rapids of Maipures according to the demands of the season and trade. The headquarters of the Upper Orinoco rubber gatherers is at San Fernando de Atabapo, the only important settlement above the rapids of Maipures. The place is a collection of about 100 huts, presenting an appearance very much like that of a new far western mining camp. From Ciudad Bolivar, to reach the farthest outpost of the rubber industry on the upper river, parcels have to be carried in four different launches, twice on mule back, five times in dugout canoes, and eight times on men's backs. There is great loss from wreckage and theft.

There are a few well-organized companies with headquarters at Ciudad Bolivar, which obtain concessions for certain forest areas from the Venezuelan Government, and then proceed to exploit them in a systematic manner, preserving the trees for use year by year. However, there are no companies such as the famous Asini Cía. of the Machado River in Brazil, which maintains a permanent camp at Calama, including modern offices, machine shop, launch service, cattle barns, etc., and employs 3,500 men, producing annually 700 tons of rubber. There the territory and camps are not abandoned during the dry season, the men gathering Brazil nuts until the rains come again and the rubber season begins. Throughout the Venezuelan rubber district, for the most part, camps are abandoned during the dry season (November to April), the men retiring down the river to Ciudad Bolivar and other places of the district and returning in the spring.

After the forest has been "prospected" for rubber trees, the men lay out two routes of 300 to 500 trees each, one going out from and one coming into camp, trails being cut through the forest undergrowth. If it rains the latex is spoiled, as it is useless when mixed with water. One hundred pounds of latex yield 60 pounds of crude rubber if the season is a good one. On an average, 500 trees produce 25 pounds of pure rubber. Mazarandul wood is used exclusively for the smoke smudge in drying (curing) the latex.

The old Venezuelan system has, unfortunately for the future of the industry, consisted of felling the tree and scoring it as much as possible to secure the entire content of the latex at one working.

Modern methods, which the Government recommends and endeavors to enforce, are based on the successful Brazilian system, as follows:

The rubber trees (*Hevea Brasiliensis*) are subjected to the following rules for scoring and tapping the trees: At first a long-handled narrow-bladed ax is used, enabling the men to make incisions at twice their own height from the ground. No tree less than 4 spans in circumference is touched, and cuts must be 2 spans apart, so that, if a tree has 12 spans, a circle of 6 spans is made each day. At first these cuts are too high to permit cups to be placed to catch

the latex, but they are necessary to stimulate the flow of the sap of the tree. These cuts are made slantingly. Each day a new ring of cuts is made, one span below the last ring, so that within one week the flow of sap is sufficient to be collected. A small tin cup is pushed into the bark of the tree under each incision, to catch the flowing sap. A short-handled ax is now used, and rows of cuts, one breadth below the others, are continued until the ground is reached, when new ones are started halfway between the old ones, and this is continued indefinitely so that the old cuts are not reached again for many years and the trees continue to produce rubber sap.

Great care is necessary in smoking the latex. If it is allowed to stand too long it will contain many holes, like those in a cheese, and then grades as an inferior quality. While fresh the latex is smooth and firm for the best quality. The old way was to pour the latex on a wooden paddle and revolve it in the smoke until the ball weighing several pounds was produced. This method made layers of mixed quality. The best method now employed is to use cylindrical wooden spools, about 12 inches long and 9 to 10 inches in diameter, with low flanges at each end, resembling a shallow spool. After the latex is smoked evenly, it is cut off and makes a flat slab, in which form it is more easily packed for transport and is also of more uniform grade.

In the Venezuelan fields, when the trees are not cut down and destroyed, a V-shaped cut has been used, but has been allowed to cover the tree entirely, causing its death.

The exploitation of rubber and balata in Bolivar and Amazonas has been carried on in an absurd, anti-economic, and irrational manner for years, despite the efforts of the Government, which since 1917 has refused permits of exploitation near Maipures on account of the fear of the total destruction of the wealth of the region. Few, if any, of the buyers of the products of the forests—that is, the merchants of Ciudad Bolivar—have ever penetrated into the forests or visited the source of the products that they handle, and many of them do not even know the leaves or botanical properties of the plants and trees. Such a visit to the producing regions would require a journey of 50 to 100 leagues from the city (league=2.63 miles).

It is estimated that there are about 6,000 men engaged in the work of the forests, in rubber, balata, "sarrapia," etc. The merchants and traders of Ciudad Bolivar invest annually the sum of approximately 15,000,000 bolivars (\$2,895,000), in the industry, advancing a huge sum in anticipation of a good year in the forests. Advances are made without evident security, other than the known reputation for honesty and industry of the individuals engaged in the work.

An unfavorable factor, in addition to the reckless system of destruction of the bearing trees, has been the increasing custom of adulterating the gums collected. There are many plants of the forest areas that produce a latex, or gum, similar in appearance to the rubber, or balata; these are known to the workmen, who introduce them into the pure latex in order to gain higher weights and hence better pay for their work. The men are often very careless and destroy more trees than they tap intelligently—the waste

being terrific. It has been said that the native Indians are the best rubber and balata gatherers and workers, being more careful and intelligent than the native of mixed mulatto or Indian blood. The practice of adulteration has done much to discredit the products of Venezuela in foreign markets, and much lower prices are being paid for them.

Since 1917 the attention of the Government has been directed to the destruction of the natural wealth of the national forests, but the merchants do not cooperate, and the salaries paid to the zone inspectors are so low that very often they can not afford to own or hire the necessary travel equipment (saddle and pack mules and camp outfits) to cover the enormous territories of exploitation. Among the men actually engaged in the work one finds a great ignorance and indifference to the future.

Recent legislation calls for careful supervision of the concessions and methods of collection of the gums, etc., and requirements have been modeled after the regulations in effect in British Guiana (the Downs Land Regulation, 1915) and in Dutch Guiana, which provide that no tree under 36 inches in circumference shall be touched, and then only one-half of the surface, at any one time (season), with heavy penalties for those who cut down the trees.

Concessions for the exploitation of given forest areas are made to contain these conservation provisions, but the greed of the concessionaires, who in turn are controlled by the merchants of Ciudad Bolivar, combined with the ineffectual system of supervision and inspection and the attitude of the workmen, defeat every effort at conservation of the natural wealth of the district. Recent careful surveys of the rubber and balata industry of Bolivar show that it is only a question of time until it will cease to occupy a leading position.

There is also the eternal psychology of the pioneer and the lure of fortune in the unknown chance of the forest. The entire system of trade of Ciudad Bolivar and the district may be said to be based on speculation and on chance.

The method employed is like that of "grubstaking" in the mining districts of the United States. During the dry season of the year (November to April) the men lie about in the towns of the district, waiting for the rubber season to begin. Then there is a rush to the city and application to the merchants for supplies of food, arms, clothing, and equipment, which are to be furnished on credit and paid for by products to be collected during the season in the jungles. Usually there are small contractors, or leaders, whom a group of men follow year by year and who ally themselves with the larger concessionaires, who are very often the merchants themselves. It is often the case that the men, soon after their season in the forests, have dissipated their earnings and have to be sustained on credit during the dry season also. There is such a scarcity of men that their demands must be met if the contractor hopes to secure sufficient numbers to exploit the concession. Each peon, or workman, must have heavy advances for his family, his equipment, etc., and these demands the contractor must meet; the sums received by each individual often average from 800 to 1,000 bolivars (\$154.40 to \$193) as an advance on his season's work, the amount being supplied either

in money or in merchandise, or both. The average equipment of a rubber or balata gatherer for the season is as follows:

	Value in bolivars.
1 hat, felt, average value.....	40
1 blanket, cotton.....	80
1 revolver, caliber 9 millimeters, long barrel, rubber handle, and 100 cartridges.....	110
1 cartridge belt.....	25
1 hammock, ordinary.....	12
1 blanket, light weight.....	10
1 towel, light (similar to bath towel).....	10
1 pair of sandals, and other articles of clothing, etc.....	20
Provisions, rum, tobacco, etc.....	5
1 or 2 suits of light-weight clothing.....	80
Total.....	392

EXPORTS OF RUBBER.

The amount of rubber exported to the United States in 1914 was valued at \$173,959 and in 1915 at \$137,083, exports of balata being much greater. During the five most recent years the exports of rubber from Ciudad Bolivar to this country have been: 1916, 282,650 pounds, valued at \$170,068; 1917, 340,237 pounds, valued at \$162,819; 1918, 64,165 pounds, valued at \$23,482; 1919, 337,792 pounds, valued at \$122,245; 1920, 209,022 pounds, valued at \$50,016. The foregoing figures are those of the American consular agency.

The official Venezuelan Government statistics state that during the year 1919 (the latest period for which such figures are available) Ciudad Bolivar exported to the United States 136,796 kilos (kilo = 2.2046 pounds) of rubber, valued at 586,709 bolivars (\$113,235), and 34,235 kilos of sernamby, valued at 81,381 bolivars (\$15,707). Other shipments included 9,314 kilos of rubber to Great Britain, valued at 36,572 bolivars (\$7,058), and 10,664 kilos, valued at 46,410 bolivars (\$8,957), to Trinidad, for ultimate shipment to Great Britain.

BALATA.

METHODS AND CONDITIONS OF INDUSTRY.

At the present time the town of Tumeremo is the largest center of the balata industry, the exploitations extending to the south and southwest toward the Caroni River. Other areas of collection are found along the lower reaches of the Caroni, Caura, and other rivers, including the Maipures region of the Orinoco. More attention has been paid to the collection of balata than to rubber on account of the greater proximity of the areas containing the trees and also on account of the constant demand from Great Britain. The towns of El Callao, Guacipati, and Upata continue to do a declining trade in balata.

The conditions described in the case of the rubber industry also apply to the balata industry; there is the same carelessness, thoughtless, and wasteful destruction of the trees, and labor conditions are identical. The Guiana forests have the advantage of greater proximity to the market center of Ciudad Bolivar, but transportation is overland over the route described from Tumeremo to San Felix on the

Orinoco River, costing quite as much as the long river route to the rubber camps of the Upper Orinoco. The production and value of balata exceeds that of rubber at the present time, and the demand for this product has been greater in England than in the United States.

Balata was described in 1883 by Ernst as a species of gutta-percha, not of much value and not known to commerce at that time. From 1913 to 1918 Venezuela exported an average annual quantity of 1,436,200 kilos (1 kilo=2.2046 pounds), valued at 5,522,332 bolivars (\$1,065,811). In this total there is not counted the quantities of "pendare" and "purguo" also exported and used as substitutes for gutta-percha. The balata grows all over the Guianas and as far south as São Paulo and Minas Geraes in Brazil, the Venezuelan variety being *Mimusops balata* Gaertn., which is also found in the West Indies. The *Mimusops globosa* Gaertn. is the plant of the "purguo" or "purvio" and is a native of the island of Trinidad and the immediate Venezuelan coast section. It is not true that "pendare" is derived from the same species of tree.

The balata grows usually at the foot of the hills where the soil is moist and fertile, but not swampy. The tree is found scattered among the other species of the forest and runs about four or five to the hectare (1 hectare=2.47 acres), on an average, though natural plantations have been found where there were as many as 40 trees to the hectare.

It is estimated that each tree produces an average of 3 gallons of latex, giving 8 kilos of balata. The average price is 160 bolivars (\$30.88) per 100 pounds. The balata tree sometimes grows to a height of 25 meters (1 meter=3.28 feet), with a diameter of 77 centimeters (1 centimeter=0.39 inch). A tree 15 centimeters in thickness may be tapped. The outer bark does not contain the latex and is about 3 centimeters thick. The inner bark has a thickness of 8 millimeters and contains the greatest amount of the desired sap, or latex, though care must be exercised not to cut through to the inside against the wood, as the tannic acid also contained in the sap of the tree would soon turn the juice black. Carefully exploited areas of balata in Dutch Guiana have produced again in two years' time.

In British and Dutch Guiana the taller trees are scored by means of ladders made in the forests and reaching to a height of 5 meters or more, while in Venezuelan territory this is not done, the men preferring the easier method of felling the tree, when a greater immediate yield is obtained. An interesting estimate of the annual loss occurring in Venezuela from this vicious and wasteful method of destruction of forest wealth is as follows:

It has been calculated that each balata tree produces, on an average, 3 gallons of latex, giving 8 kilos of balata, which is sold at an average price of 160 bolivars (\$30.88) per 100 pounds (quintal). This makes the value of each tree felled 27.95 bolivars (\$5.39). If the tree were scored (tapped) standing, by the method recommended, which would preserve it for many years of constant production, 1 gallon of latex would be produced, rendering (more or less) 3 kilos of gum, worth 10.44 bolivars (\$2.01). This sum represents the annual average value of each tree producing balata. It is also estimated that in the past there have been 10,000 men, on an average, engaged in the

balata industry during the season, which lasts from the 15th or 30th of May to the end of August and from the middle of November to about the 15th of February (during some years, when the rainy season lasts through to February, the season is continuous, except for the period during which the tree is in flower). The men work only during the first half of the day in the forest, returning to their huts to perform the work of curing the collection of the day. An average of two trees are felled per day, which, in six months (the length of the season) would amount to 3,600,000 trees; and, with this destruction going on during the 10 years of the balata industry, 36,000,000 trees have been destroyed. Taking the value of each tree (\$2.01) and estimating the annual yield, an average value for the 10 years may be said to be 80 bolivars, or \$15.44, per tree. This almost inconceivable destruction of wealth has amounted, if the foregoing calculations are correct, to more than half a billion dollars.

By working the trees carefully by the tapping method recommended, from 6 to 8 trees can be handled per day. In reality, the greater number of trees worked by tapping more than compensates for the greater immediate yield from each tree after it is felled. Several of the Tumeremo contractors (concessionaires), such as the firm of Bianchi & Odremán, have adopted the British Guiana equipment of climbing belt, spurs, etc., and the work of their men is carefully supervised as far as possible; but the general condition of the industry is one of waste, the productive areas are becoming more and more distant from the river, and the cost of collection and marketing is consequently higher as time goes on.

During 1917 the Venezuelan Government issued a total of 218 permits to exploit balata in the territory of the State of Bolívar alone. These 218 permits covered an area of 272,000 square hectares, and the payments to the national treasury amounted to 43,600 bolivars (\$8,415), or an average of 200 bolivars (\$38.60) per concession. The permits were divided among the districts of the State as follows: District of Roscio, 169; Piar, 23; Heres, 11; Cedeno, 9; and Sucre, 6.

According to the law and regulations governing these forest-exploitation permits, each permit should cover exactly 1,250 hectares; but in actual practice they really include much more territory than that allotted, as there exists no systematic inspection or survey of the lands allotted and the office of the State intendant of public lands and forests is handicapped by the lack of sufficient personnel and funds for proper administration and supervision. Boundaries and limits are, at best, indefinite in the partially explored country covered by these concessions; and local names for points of identification change, resulting in great confusion. There is a limit of 25 claims allowed to any one contractor. It is customary for the merchants interested in the balata and rubber trade to secure the permits, basing their operations on the reports received from their foremen or subcontractors. They do not know the territory themselves, as a rule. The intendant's office is little more than a tax-collection agency for the fiscal department of the Government, the procedure being for this office to receive the applications for concessions, publish these in the local press as required by law, and then refer the matter to Caracas, where it comes under the administra-

tion of the Ministry of Fomento (Development)—after which the intendant makes out the tax or rental liquidation on which the contractor pays the annual rental tax to the Government. Upon the payment of the rental tax the contractor is ready to begin exploitation and practically fixes his own limits, the only possible objection or interference being that of some other interested contractor on adjoining territory. In the solicitation of exploitation permits, local landmarks and natural divisions are named by the contractor, and, without proper maps, surveys, or other information, the office of the intendant of public lands and forests is practically helpless to determine proper boundaries and divisions.

EXPORTS OF BALATA.

Exports of balata from all Venezuela for the year 1913 were valued at 10,532,994 bolivars (\$2,032,868), but fell off to 3,619,812 bolivars (\$698,624) in 1914, on account of the closing of the British market, which had always been the principal one for Venezuelan balata up to the beginning of the war. Exports of balata from all Venezuela for four more recent years have been: 1916, 626 metric tons (1 metric ton=2,205 pounds), valued at 2,936,697 bolivars (\$566,883); 1917, 1,172 tons, valued at 6,641,840 bolivars (\$1,281,875); 1918, 1,242 tons, valued at 6,801,556 bolivars (\$1,312,700); 1919, 1,120 tons, valued at 6,504,484 bolivars (\$1,255,365).

In 1916 exports of balata from the single port of Ciudad Bolivar, according to Venezuelan Government statistics, reached the total of 626 metric tons, valued at 2,936,697 bolivars (\$566,783), of which the United States received 241 tons, valued at 1,070,229 bolivars (\$206,554); Great Britain 373 tons, valued at 1,813,286 bolivars (\$349,964); and Trinidad 10 tons, valued at 42,600 bolivars (\$8,222). For the year 1917 the amount was 1,172 tons, divided as follows: United States, 163 tons, valued at 874,707 bolivars (\$168,818); Great Britain 944 tons, valued at 5,450,271 bolivars (\$1,051,902); Trinidad 62 tons, valued at 308,275 bolivars (\$59,497). In 1918 Ciudad Bolivar's total shipments of balata amounted to 1,243 metric tons, valued at 6,801,556 bolivars (\$1,312,700), of which the United States received 187 tons, valued at 964,475 bolivars (\$186,144); Great Britain 516 tons, valued at 2,942,194 bolivars (\$567,843); and Trinidad 529 tons, valued at 2,894,887 bolivars (\$558,713)—this last being mostly for transshipment to Great Britain. In 1918 Trinidad received a large part of the shipments from Ciudad Bolivar for transshipment, on account of the increasing shortage of ocean tonnage and also because of the better trading facilities that had been provided on the island in connection with British interests in Ciudad Bolivar. During the year 1919 Ciudad Bolivar's shipments of balata were: United States 377 metric tons, valued at 2,086,585 bolivars (\$402,711); Great Britain 439 tons, valued at 2,577,603 bolivars (\$497,477); Trinidad 298 tons, valued at 1,810,297 bolivars (\$349,387)—making a total of 1,114 tons, valued at 6,474,485 bolivars (\$1,249,575).

As stated, the foregoing figures are from the official statistics published by the Venezuelan Government. According to the figures of the American consular agency at the port the declared exports of balata from Ciudad Bolivar to the United States have been as fol-

lows: 1914, \$292,482; 1915, \$350,148; 1916, 584,341 pounds, valued at \$269,273; 1917, 603,555 pounds, valued at \$300,424; 1918, 413,353 pounds, valued at \$193,285; 1919, 778,538 pounds, valued at \$443,356; 1920, 371,749 pounds, valued at \$212,599.

PRICE QUOTATIONS.

The average price paid in Ciudad Bolivar has been mentioned as 160 bolivars (\$30.88) per 100 pounds. This local price fluctuates with the New York and Liverpool quotations. On September 30, 1920, balata was quoted in New York at \$0.64-\$0.65 per pound, in block, and did not appear to be suffering from the general decline in prices of nearly all Venezuelan exports; quotations remained firm at \$0.64 per pound in New York at the end of November, 1920, and commission merchants were recommending prompt shipment of stocks on hand.

FUTURE OF INDUSTRY.

On account of the wasteful method, or rather lack of method, of exploitation, and the constantly receding areas of production as the forests become more and more exhausted, bringing about higher transportation costs and increased collection costs as the number of tress gradually becomes depleted, it is only a question of time until the production of the district will suffer a sharp decline, unless the Government can undertake vigorous conservation action and enforce proper methods of exploitation of the forests. For the present, the annual amount exported is dependent upon market conditions in the United States and the United Kingdom. A few contractors who have undertaken the development of the industry in an organized manner will continue to ship regular quantities for years to come.

CHICLE.

From 1910 to 1914 Ciudad Bolivar exported an annual average of 251,275 kilos (1 kilo=2.2046 pounds) of chicle. Prof. Pittier, agricultural and botanical expert for the Venezuelan Government, in his published study of the national plant life (Ecological Review of the Natural and Agricultural Products of Venezuela, 1920), makes the statement that the Venezuelan chicle is not derived from the nispero (*Achras Sapota L.*) but from species of the same family (*Achras*) that have not as yet been scientifically classified; and he adds that he himself demonstrated that the chicle of Yucatan and Guatemala is also not derived from the above-named plant (*Achras Sapota L.*).

CONDITIONS OF INDUSTRY.

The value of the plant was unknown generally in the Bolivar district until 1911 when a total of 593 kilos (1 kilo=2.2046 pounds) was exported, and the industry rapidly increased, 1,902 kilos being exported in 1912, 68,000 kilos in 1913, 264,320 kilos in 1914, and 464,361 kilos in the first half of 1915. At that time only one or two chewing-gum manufacturers of the United States had learned to use Venezuelan chicle, but these, it was said, found it better and cheaper than the Mexican product.

The same general forest zones and areas applying to rubber and balata also apply to chicle, and the same general conditions obtain in the industry. The main difficulties are in preventing the introduction into the gum, in the forests, of other similar vegetable saps and gums to produce more weight. Merchants handling chicle at Ciudad Bolivar and the other points of collection have frequently been forced to adopt the method of boiling the raw gum in order to free it from the substitutes and adulterations before shipment for export.

EXPORTS FROM CIUDAD BOLIVAR—AMERICAN IMPORTS FROM ALL VENEZUELA.

The following table shows the exports of chicle from Ciudad Bolivar to the United States for the last eight years, according to the figures of the American consular agency:

Years.	Pounds.	Value.	Years.	Pounds.	Value.
1914		\$130,416	1918	565,753	\$150,616
1915		411,490	1919	186,665	49,170
1916	135,680	24,469	1920	509,113	145,603
1917	170,445	45,440			

The official returns of the United States show the following imports of chicle from Venezuela as a whole during five recent years:

Years.	Pounds.	Value.
Fiscal year 1916	930,535	\$213,022
Fiscal year 1917	137,967	23,324
Calendar year 1918	541,750	138,615
Calendar year 1919	172,077	49,142
Calendar year 1920	414,426	106,657

TONKA BEANS (SARRAPIA).

The tonka beans of commerce are the seeds of the beautiful Guiana tree belonging to the family of Papilionaceæ (*Coumarouna odorata Aubl.*), found throughout the district, but principally gathered along the Orinoco, Cuchivero, and Caura Rivers. Its value lies in the aromatic extract of what is called the "coumarin"—used in perfumery, in flavoring extracts, and for cigarettes and other perfumed tobaccos.

Prior to 1912, the industry of gathering the beans for market was the chief means of livelihood of the people of the Caura River region, but the low prices following this period turned their attention to rice growing to a greater extent. The demand revived in 1917, when shipments were heavy. The industry of collecting this product of the forest has the advantage of being in season when the men are not engaged in the rubber, balata, or chicle collection, the pods producing the kernels becoming ripe in the dry season of the year (November to April). The kernels are merely picked from the ground and sent down the river to Ciudad Bolivar for transshipment to Trinidad (Port of Spain), where they are prepared for export, one firm possessing a practical monopoly of the trade in this article.

Trinidad's trade in this product is described by Consul H. D. Baker in a report dated August 19, 1920:

One of the most important exports of Trinidad, and one in which the island has a practical monopoly in the world's commerce, is tonka beans, the market for which is chiefly in the United States, where the beans are used extensively by various tobacco companies for perfuming smoking tobaccos. There is also a limited market for these beans in France and Germany, where they are used in connection with the manufacture of various perfumes. The use of tonka beans by tobacco and perfume manufacturers, though apparently of considerable importance in many instances, is nevertheless, generally speaking, obscured in trade secrecy, and details concerning this use are confined to the manufacturers themselves.

Tonka beans are not produced in Trinidad, but in the forests of the Caura and Orinoco Rivers in Venezuela, where the trees grow wild in great numbers and with an excellent quality of fruit, with a large content of "coumarin," which is the active principle of the odor, or perfume, that gives the kernel its commercial importance. Trinidad, however, has its part in the industry, being the place from which the beans are exported, because the curing process is effected there. The beans are soaked in rum for a few days, after which they are spread out to dry for a short period, during which drying process innumerable small crystals form upon the surface, giving the beans a frosted appearance and emitting a strong and rather sickening aroma. These crystals are the active principle of the perfume.

The export trade is controlled by one firm in Trinidad (Port of Spain), which manages the curing. It advances money to the collectors of the beans in Venezuela.

The exports of tonka beans to the United States show large variations from year to year and apparently depend a good deal on the prices, which fluctuate considerably. It is understood to be the policy of American manufacturers who make use of such beans to buy in large quantities and accumulate large stocks when prices are favorable and perhaps not buy at all when prices seem too high. In 1917 Trinidad exported to the United States, as shown by the returns of the American consulate, 752,601 pounds, valued at \$472,055; in 1918 the shipments decreased to 19,213 pounds, valued at \$11,439, while they increased again in 1919 to 171,560 pounds, valued at \$167,221. [Editor's Note.—In 1920 the amount exported to the United States was 586,289 pounds, valued at \$833,064.]

The total value of tonka beans exported from Venezuela in 1913 was 3,639,200 bolivars (\$702,366); in 1914, 48,308 bolivars (\$9,323); and in the first half of 1915, 445,223 bolivars (\$85,928). Exports for the years 1916 and 1917 were variously declared as "tonka beans" and as "sarrapia"—actually one and the same thing—the combined totals giving, for 1916, 123 metric tons (1 metric ton=2,205 pounds), valued at 142,088 bolivars (\$27,423), and for 1917, 956 metric tons, valued at 361,317 bolivars (\$69,541). In 1918 shipments from Venezuela to the United States totaled only 83 metric tons, valued at 82,267 bolivars (\$15,685).

CEBADILLA.

"Cebadilla" is another product of the forests of Bolivar and Guiana that attained a considerable demand during the war. Cebadilla consists of the seeds of the *Schoenocaulon officinale* Asa Gray, and from them is extracted the veratrina, the powder being used also in insecticide preparations. Prior to 1914 the bulk of the exports of this product went to Germany, but during the conflict it was divided between France, Great Britain, and the United States. The domestic name "cebadilla," a diminutive of the Spanish word "cebada," meaning barley, is also given as "sabadilla," under which name it is exported.

Following are excerpts from a report by Consul Homer Brett, at La Guaira, Venezuela, dated March 21, 1916, and published in COMMERCE REPORTS April 14, 1916:

A press telegram from England recently published in Caracas stating that the asphyxiating and tear-producing gases used in the present war are made from "sabadilla," a product exported only from Venezuela, has caused considerable discussion.

The highly poisonous seeds have long been used in medicine. The substances produced from sabadilla seed are cavadine, or crystallized veratric, an alkaloid with the formula $C_{20}H_{26}O_4N$; veratric acid ($C_6H_{10}O_4$), and sabadalline ($C_{14}H_{18}O_4N$). This last is an amorphous, pleasant-smelling alkaloid that accelerates the beating of the heart.

While nothing is known here as to its use in the production of war gases, it is a fact that sabadilla dust irritates the eyes, the throat, and especially the nose so much that laborers working with it are obliged to wear protecting masks. Sabadilla powder is used by cattle raisers in this country as an insecticide with excellent results. It is stated that in Europe it is used in the manufacture of disinfectants, and that in the Balkan States and Russia it is employed in tanning fine leathers and as a mordant for dyes.

The first exportation from Venezuela was made to Hamburg 25 or 30 years ago. The foreign demand has never amounted to more than 5,000 sacks annually. Whenever production passes beyond this point the price has fallen below the cost of gathering. It is not a cultivated crop, but might become such if new uses were discovered which would cause an increased and regular demand. It grows in the vicinity of Caracas and is exported from La Guaira. The exports during the whole of 1913 and 1914 and the first six months of 1915 are given below:

Countries.	1913		1914		January-June, 1915.	
	Kilos.	Bolivars.	Kilos.	Bolivars.	Kilos.	Bolivars.
United States.....			34, 215	24, 916	6, 286	4, 400
Germany.....	247, 226	220, 598	112, 826	90, 250		
France.....			2, 300	1, 840	13, 435	9, 406
Netherlands.....	9, 320	7, 992	16, 400	11, 479	65, 687	45, 468
Spain.....					840	588
Italy.....			3, 457	2, 440		
Total.....	256, 546	228, 590	169, 228	130, 925	86, 248	59, 861

For the entire year of 1915 exports of sabadilla to the United States, as declared at the La Guaira consulate and the Caracas agency, were 61,433 pounds, valued at \$9,097, as against 73,732 pounds, worth \$7,454, in 1914. The newspapers state that immediately after publication of the press telegram above mentioned the price of sabadilla in Caracas rose from 40 bolivars (\$7.72) to 60 bolivars (\$11.58) per 220 pounds, but that none is to be had in the market.

In 1917 Venezuela as a whole exported 231 metric tons of cebadilla, valued at 144,676 bolivars (\$27,922). In 1918 the quantity was 75 tons and the value 53,242 bolivars (\$10,276).

BALSAM OF COPAIBA.

Balsam of Copaiba is exported from Bolivar and also from Maracaibo in Venezuela, the Maracaibo grade being considered superior to the Orinoco production, which it also exceeds in quantity. The total exports since 1913 have averaged 57,370 kilos annually (1 kilo=2.2046 pounds), with a tendency to diminish. The balsam is extracted from the trunk of the *Copaifera officinalis* Willd. and also, very probably, from other species of the same family. The tree is found through-

out all the forest areas adjoining the savannahs of the Orinoco basin in Venezuela and also in the Lake Maracaibo region. Its local name is "cabima," or "cabimba."

Conditions of the industry in the Ciudad Bolivar commercial district are very generally similar to those of the rubber and balata industries.

Declared exports of this balsam to the United States in 1914 from Ciudad Bolivar were valued at \$10,851 and in 1915 at \$2,459. In 1916 exports to the United States totaled 16,448 pounds, valued at \$5,057; in 1917, 17,125 pounds, valued at \$7,651; in 1918, 28,202 pounds, valued at \$12,562; in 1919, 43,737 pounds, valued at \$14,090; and in 1920, 5,878 pounds, valued at \$1,542.

During the year 1916 Venezuela as a whole exported to the United States a total of 89,312 pounds of copaiba balsam, valued at \$36,693, the bulk of the amount coming from Maracaibo. In 1917 exports to the United States totaled 84,869 pounds, valued at \$44,539. In 1918 shipments amounted to 119,756 pounds, valued at \$82,171.

The total output of the country in 1917 was 53 metric tons (1 metric ton=2,205 pounds) and in 1918, 30 metric tons.

About one-third of the balsam of copaiba produced in the Bolivar region goes to Trinidad for reexport to the United Kingdom.

Small quantities of divi-divi are exported from Ciudad Bolivar and the other ports of the district.

OTHER FOREST PRODUCTS, NOT EXPORTED.

Other forest products, which are not exported, are mentioned below:

ANGOSTURA BARK.

This medicinal bark forms the basis of the famous Angostura Bitters, formerly manufactured in Ciudad Bolivar (of which the old name was Angostura), but now made by the inventor's family in Port of Spain, Trinidad. It is the bark of the tree scientifically known as *Cusparia trifoliata* (Willd.) Engler, which is found scattered throughout the forests of the eastern and central part of the Orinoco Valley. Its properties are known to be those of a fever specific and tonic. The bark has not been exported since 1913 from Ciudad Bolivar.

QUINA.

Four kinds of "quina" are known to exist in the forests of the Bolivar district, namely, *Cinchona tucujensis* Karst, *C. cordifolia* Karst, *Ladenbergia moritziana* (Klotzsch) Schum., and *L. macrocarpa* Schum. Although from 10 to 1,000 kilos (1 kilo=2.2046 pounds) have been annually exported from Venezuela, principally from the Andean region of the country, via Maracaibo, the product is not exported at present from Ciudad Bolivar. The Venezuelan product is used principally in New York in the preparation of dentifrice pastes.

SARSAPARILLA.

Sarsaparilla, found in large quantities (according to reports) along the Rio Guaniamo, a tributary of the Cuchivero, and existing also in many other places of the district, was formerly exported. The various species of smilax which produce the root merit attention.

IPECAC.

"Raicilla" (or "epecaguana," as it is also called in Venezuela and Colombia) is the ipecac of commerce. It is also found in abundance, according to reports, but no attention has yet been paid to it for exportation from the district. It is sometimes confused with other products on account of the general application of the name "raicilla," or "little root."

KAPOK.

Another forest product is the kapok of commerce, which has been exported in small quantities, not at all proportionate to the growing demand of the world's markets for the product. There are several good species of the *Bombaceas* in the district, but the wool or silk is not collected, on account of the lack of knowledge and interest and the scant labor supply.

VEGETABLE WAXES, ETC.

There are also several valuable vegetable waxes, varnish gums, etc., among the latter the palm of the species *Ceroxylon*, found also in Colombia.

Innumerable varieties of medicinal plants and herbs are found in the district.

TRADE IN HIDES AND SKINS.

The exportation of cattle hides from Ciudad Bolivar is entirely out of proportion to the number of beef cattle actually in the immediate district, this number being given in 1918 as about 128,000 head. Hides come into the port from the entire Lower Orinoco, Guarico, Apure, and Arauca River Valleys, being shipped from great distances, because the river system affords the only cheap means of transportation to market. Hides constitute by far the largest item of export from Ciudad Bolivar. Those going to the United States in 1914, according to the figures of the American consular agency, were valued at \$558,028 and in 1915 at \$774,217; in 1916 the amount was 2,558,730 pounds, valued at \$671,574; in 1917, 932,963 pounds, valued at \$293,438; in 1918, 393,670 pounds, valued at \$88,221; in 1919, 2,988,684 pounds, valued at \$1,053,507; and in 1920, 974,026 pounds, valued at \$254,943.

The following table will give an idea of the volume and destination of the port's prewar and recent trade in cattle hides, according to Venezuelan Government statistics:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Countries of destination.	1913		1914		1915		1916	
	Kilos.	Bolivars.	Kilos.	Bolivars.	Kilos.	Bolivars.	Kilos.	Bolivars.
Belgium.....	47,000	74,883						
Curacao.....							5,625	19,402
France.....	36,075	96,567	9,650	24,889				
Germany.....	433,567	1,116,568	194,861	534,586				
Great Britain.....	2,130	5,600			1,621	4,418		
Spain.....			1,187	3,199	1,425	2,850		
Trinidad.....	200	521	420	1,080	1,080	3,240		
United States.....	827,499	2,170,722	738,572	1,875,732	980,242	2,530,989	460,351	1,319,396
Total.....	1,346,471	3,454,862	944,690	2,438,826	984,368	2,591,497	465,976	1,338,788

324 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

Countries of destination.	1917		1918		1919	
	Kilos.	Bolivars.	Kilos.	Bolivars.	Kilos.	Bolivars.
Barbados.....			10,057	19,598		
Canada.....			40,000	74,000		
Curaçao.....	99,568	272,388				
France.....					11,000	38,280
Great Britain.....	1,206	3,087	134,278	307,857	126,433	412,185
Trinidad.....	20,254	54,198	66,950	143,092	95,658	319,995
United States.....	279,718	790,265	201,582	403,794	1,417,191	4,717,218
Total.....	400,746	1,119,938	452,867	948,341	1,650,282	5,487,678

The United States takes by far the greater part of the exports of goat and deer skins from Ciudad Bolivar. Exports to this country invoiced at the American consular agency have been as follows during four recent years:

Articles.	1917		1918		1919		1920	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Goatskins.....					10,621	\$5,499	3,489	\$1,320
Deerskins.....	49,368	\$9,800	4,809	\$731	171,134	41,482	56,170	14,540

Both Curaçao and Trinidad take some goat and deer skins for reexport, the trade being carried on by small sailing schooners, operating frequently in this interisland traffic and picking up small lots of cargo here and there.

AIGRETTE PLUMES.

Aigrette plumes form another important item in the trade of Ciudad Bolivar, the exports reaching the high figure of 2,483 kilos (1 kilo=2.2046 pounds), valued at 3,165,215 bolivars (\$610,886), in 1913, and gradually diminishing until in 1917 none were sent out of the country, according to the official returns. The law no longer permits the killing of the birds for their feathers (plumes), and concessions are granted to individuals for the right to collect the dropped or moulted plumes found at the habitual roosting places of the cranes. It may be supposed that the very strict enforcement of the national law against the possession of firearms has had a great deal to do with the falling off of recent exports.

KINDS OF BIRDS.

Both the large and the small species of the aigrette crane exist in large numbers in many parts of Venezuela, inhabiting the lowlands and also the overflow areas of the great llanos. The larger bird bears the long, straight aigrette plume, averaging from 15 to 20 inches in length, and the smaller bird, exactly like the large one, bears the small, curled plume, which is known in Venezuela by the local name of "pluma chumba" and is by far the more valuable of the two.

The importation of aigrettes into the United States is prohibited, and Dr. William T. Hornaday's book, *Our Vanishing Wild Life*, in 1913 cited the manner of obtaining the plumes in Venezuela—that is, the slaughter of the birds in their habitual nesting places for the feathers. As the trade in aigrettes constitutes a considerable item in the annual exports of Venezuela, the prohibition of entry of the plumes into the United States, Canada, and Germany was a blow to the industry, and the Venezuelan Government has legislated on the subject. The national law of June 26, 1917 (Official Gazette, No. 13,193, Art. 2) prohibits the killing of the birds for their feathers (plumes) and dictates that the plumes can only be collected from the ground during the molting season, from July to November. The entire law sets forth strict provisions for the conservation of the birds and prohibits the exportation of plumes illegally obtained. Contracts are provided for, whereby responsible people can obtain an exclusive right to the collection of plumes from known "garceros," or roosting places of the birds, and supervision is maintained in the areas that the birds inhabit.

The larger bird is called by the natives "garza blanca" and the smaller one "chosmita," or "chumbita." Commercially, the longer plumes of the garza blanca are known as aigrettes and the curled short plumes of the chumbita are called "crosses." Each bird of both sizes carries 25 to 30 plumes on each wing during the season. Those of the male bird are more brilliant and larger than those of the female. The plumes taken from killed birds are known as "live plumes" and have a higher commercial value than the "dead plumes" collected from the ground where they have been dropped by the birds in molting. It is claimed that the dead plumes have lost their brilliancy and become brittle and of less value. The chosmita, according to the opinion of observers, does not drop the plumes in molting but breaks them off in penetrating the growth where the nest is. The plumes from one well-feathered chosmita weigh, on an average, $1\frac{1}{2}$ to 2 grams for each bird, while those from the garza blanca (aigrettes) weigh 5 to 6 grams.

DEVELOPMENT AND CHARACTER OF INDUSTRY.

The exploitation of the aigrette was begun in Venezuela in 1884 and gave large returns to individuals and to the Government. During the first eight years of the industry the aigrettes were worth from 700 to 800 bolivars (\$135 to \$154) per kilo (1 kilo = 2.2046 pounds), and the crosses from 1,200 to 1,600 bolivars (\$232 to \$309) per kilo. The price increased in the period from 1896 to 1901 to 1,000 bolivars (\$193) per kilo for the aigrettes and 3,000 to 4,000 bolivars (\$579 to \$772) per kilo for the crosse plumes. After 1901 the price declined, but again recovered in 1904, remaining firm until 1910, when it again declined, increasing again in 1913 to its maximum of 1,800 bolivars (\$347) per kilo for the aigrettes and 6,000 to 8,000 bolivars (\$1,158 to \$1,544) for the crosse plumes. The war brought about another decline in their value for export.

Many ranchers of the Guarico and Apure River region have installed "garceros" or breeding farms for the birds, with very good results, and the industry is fast becoming more profitable. The breeders are seeing that the law is enforced in their districts, and

poaching is being stopped. The new regulations against the ownership and carrying of firearms in Venezuela is also having its effect in this regard. No one is allowed to have even a shotgun without official permit and regulation, and the owners of "garceros" under concessions from the Government have adopted the system of guarding the roosting and feeding places of the birds to prevent poaching, not only poaching by killing the birds but also by theft of the discarded plumes.

The aigrette industry has been best developed in the llanos south of Valencia and around San Carlos. During March and April the birds are scattered throughout the plains along the partly dry water-courses and lagoons, the season being completely dry. Many of the birds migrate to great distances from their habitual places of congregation. By the end of May the rainy season has begun (in the llanos), but the bird has not as yet grown the plumes. In June the plumes begin to appear on the back of the bird at the shoulder of the wing. These tiny fine plumes are called by the manufacturers of adornments "nuptial plumes" and are considered the most valuable, but the bird must be killed to obtain them. By the end of July the plumes are not fully developed but are very clean and fine and constitute an extra fine grade; the bird must be killed to obtain them. During August and up to the 15th of September the plumes have reached full development and are classed as of superior grade, despite the fact that the delicate ends have been slightly damaged. During the latter part of September and during October the birds begin to discard the plumes while in the molting season. The tips have suffered some damage by this time, and the feathers are usually imperfect. From October 15 to November 15 the cranes have discarded the greater quantity of the plumes, and by this time the feathers are dirty, the tips are broken, and the quality is very inferior.

PROGRESS OF BREEDING.

From March to June the birds are dispersed throughout the country, living along the margins of the lagoons, rivers, and sloughs where food is found. (The aigrette crane is a wader.) By July some of the birds have begun to appear in the "garceros" or customary breeding places. Late in August the breeding season is under way, but is not uniform, as nest building, egg laying, and hatched families are found all at one time. By the end of September the little birds are well grown and can look out for themselves. In December the birds begin to leave the breeding grounds and disperse throughout the plains and rivers, none being left by the end of January.

PROCESS OF COLLECTING PLUMES.

In July the owners of "garceros" concessions begin to establish the guards over the breeding places of the cranes. Some owners watch the "garceros" during all the year. The collection of the plumes begins in October and lasts until the first days of December. The work is accomplished by means of canoes working along the water courses, the plumes being gathered from the trees and from the water. Two trips are made over a given course each day, one in the morning and one in the afternoon.

SEASONS OF EXPORTATION.

In July the "left-overs" from the preceding season are exported to Europe (these being of the lowest quality), and some fine "live" plumes are sent out to the coast, having been brought in to San Fernando de Apure under special circumstances from the Upper Orinoco and other rivers of the system (that is, killed birds from regions not under the supervision of the authorities). In August there are exported such small amounts of plumes as have been gathered from the feeding places and roosting places in widely scattered districts and some plumes that have been obtained by the hunters in the more remote regions away from the areas coming under the vigilance of the concessionaires or landowners. During October and November the plumes collected in the breeding places (molted plumes) are exported, this amount being the largest and representing 80 to 90 per cent of the total harvest of the year.

From December to April the dealers of the interior buy up the small amounts that come in from time to time from points of the far interior, and these are sent down the Orinoco to Ciudad Bolivar in the first steamers during the rainy season—in June or July, according to the season and quantity of water in the tributaries of the Orinoco reached by the light craft plying in this trade. The exporters estimate the time for these plumes to arrive on the European markets just ahead of the new season's takings.

The plumes are carefully classified by size and appearance, tied in small bunches, and packed for export in small zinc or tin boxes, great care being taken not to damage the fine thread of the plume.

GENERAL NOTES.

The owners of "garceros" maintain that the hunting of the birds destroys the industry, as they leave the districts in which they are shot at and do not return, but will return year after year to places where they find they are unmolested and will eventually become quite tame. It is a fact that some long-established and well-guarded "garceros" have increased the output of plumes by 100 per cent since effective measures were taken to preserve the lives of the birds, which come in increasing numbers. The best "garceros" are those that are flooded earlier in the rainy season, this condition causing the birds to congregate and breed sooner, with the result that the plume is more fresh and less broken. The male birds are distinguished from the females during the breeding season by the fact that they do not remain in the "garceros" at night, but retire to certain habitual roosting places after feeding the young birds. These roosting places are carefully watched, as here are found the plumes of the male bird, which are longer and more brilliant than those of the female.

Owners of "garceros" pay the Government an annual rent varying from 600 bolivars (\$116) for "garceros" producing 2 to 4.75 kilos (1 kilo=2.2046 pounds) of plumes to as high as 6,000 bolivars (\$1,158) for a production of 40 kilos or more. In 1913 the Caracas market paid as high as 4 bolivars (\$0.77) and more per gram for aigrettes and 8 bolivars (\$1.54) per gram for the crosse plumes. Since the war the price has declined very considerably on account of the slack demand from Europe.

STATISTICS OF EXPORTS.

The following table shows the exports of these plumes from Venezuela during recent years:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Years.	Kilos.	Bolivars.	Years.	Kilos.	Bolivars.
1910.....	1,189,875	656,815	1916.....	850,430	529,644
1911.....	2,044,000	1,573,767	1917.....	539,279	476,889
1912.....	1,309,000	1,332,897	1918.....	1,143,650	736,307
1913.....	2,682,288	3,250,986	1919 (first half).....	1,253,375	1,369,936
1914.....	311,114	163,012			
1915.....	2,115,088	861,858	Total.....	13,438,099	10,962,111

The exportation of aigrette plumes from Ciudad Bolivar has practically ceased since 1915, according to the official records of the Government, except for a few small shipments to Martinique in 1916, amounting to 61 kilos and valued at 22,396 bolivars (\$4,322). The big year for the trade was in 1913, when 2,483 kilos were exported, valued at 3,165,215 bolivars (\$610,886). Of this amount, France took 1,849 kilos, valued at 2,215,458 bolivars (\$427,583); the United States, 196 kilos, valued at 228,551 bolivars (\$44,110); and Germany, 215 kilos, valued at 292,197 bolivars (\$56,394).

It is a fact that the smaller bird of the species—the one having the crosse plume—is becoming more and more scarce, and it is more difficult to obtain these plumes. Maracaibo, Puerto Cabello, La Guaira, and Carupano are also ports of export for this product.

COMMERCE AND TRADE OF CIUDAD BOLIVAR DISTRICT.

Ciudad Bolivar is the trading and financial center of the State of Bolivar and the port for the entire river system of Amazonas territory and the upper Apure and Arauca territory. It receives products (principally hides, rubber, etc.) from the far-away Colombian border via the rivers mentioned, and also controls the trade and commerce of the Venezuelan Guiana region of the State of Bolivar, via the river port of San Felix (Las Tablas), situated at the mouth of the Caroni River where it joins the Orinoco. A few of the merchants of Upata, Guacipati, Tumeremo, etc., are in a position to import directly from foreign markets and do buy through export commission houses with which they have long-established relations, the latter taking care of their shipments of balata, hides, and other export products.

The commercial movement of Ciudad Bolivar becomes very active during the period just prior to the rainy season (April and May), as this is the time for outfitting the rubber, balata, and chicle collectors, as has been previously described (see p. 313). As soon as navigation opens on the upper Orinoco, steamers start to leave Ciudad Bolivar for the Falls of Maipures, the upper Arauca, etc., and goods start to move to the Guiana region via San Felix and the usual overland wagon route, or in boats and canoes up the Caroni as far as Gury and then overland to Tumeremo, etc., for the balata industry. During the dry season motor trucks have been employed on the latter route, the terrain being so favorable that the trip has

been made in a light passenger car from El Callao to Ciudad Bolivar in 12 hours by way of the Gury ford of the Caroni.

Ciudad Bolivar has an electric lighting plant, as has also Upata, and the brewery (Cerveceria de Ciudad Bolivar) supplies beer and ice to the population of the capital. Other manufacturing plants consist of small soap and candle factories, corn mills, and bottled soda waters.

BANKING.

Many of the larger business houses also do a general private banking business in connection with their other lines—the principal house being Dalton & Co. Sucs., of Ciudad Bolivar and Port of Spain, employing British and Canadian capital and acting as buyers of export products, bankers, and merchants for the articles needed in the district. The German-Venezuelan house of Blohm y Cía. has long been very active in this center and is the leading house in all lines, being operated as a branch of the Caracas house of the same name. The Caracas house of Santana y Cía. also maintains a branch in Ciudad Bolivar.

The banks of the country are represented by a branch of the Royal Bank of Canada and the agency of the Banco de Venezuela. The Banco Mercantil Americano de Caracas (Mercantile Bank of the Americas) and the National City Bank of New York also have agents here.

COMMERCIAL METHODS.

As elsewhere in Venezuela, the import and export business is carried on principally through export commission houses in New York and Europe, these houses taking care of items of export handled by the merchants and shipping miscellaneous lots of general merchandise to their customers, the accounts being usually carried in the well-known and much-used "open-account" system so long in vogue in the country. There is little specialization in merchandising, except in the drug trade, which is handled by licensed pharmacists and in which the German houses lead.

Imported articles are numerous and varied in nature, but principally such as are suited to the needs of a population living under primitive conditions. The largest and most important item of importation consists of cheap cotton goods, with drugs and medicines and hardware next in importance. The trade barometer may be said to be the market condition of rubber, balata, and chicle, unless gold mining should again become important and thereby stimulate trade as in the days of the El Callao bonanza.

The leading merchants include Italians, Corsicans, Moroccan Jews, Syrians, Spaniards, Sicilians, Germans, a few British, and Venezuelans. The Italians, Germans, and Syrians may be said to form the most influential foreign elements in commercial circles, though British interests allied with the commercial element of Trinidad have recently become an increasingly powerful factor, taking full advantage of better foreign banking facilities, the proximity of Port of Spain, and the more rapid means of communication. Port of Spain is, in reality, the point of transshipment of nearly all of Ciudad Bolivar's exports and imports, including those coming in by coastwise traffic, the vessels of the Venezuelan Navigation Co. connecting with their boat, the *Delta*, at that port.

VOLUME OF TRADE.

In 1913 the imports at Ciudad Bolivar amounted to \$1,176,020, of which \$504,541 worth came from the United States, and \$953,711 worth of products were sent to the United States out of a total of \$1,988,477 worth of exports. From January 1 to June 30, 1915, imports amounted to \$276,936, more than half of these coming from the United States and less than one-fourth from Great Britain, the nearest competitor.

The declared exports to the United States invoiced at the consular agency during four recent years are shown in the following table:

Articles.	1917		1918		1919		1920	
	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.	Pounds.	Value.
Balata.....	603,555	\$300,426	413,353	\$193,285	778,538	\$443,356	371,749	\$212,598
Balsam of copaiba.....	17,125	7,651	28,202	12,562	43,737	14,089	5,878	1,542
Calfskins.....	16,146	4,529	1,113	156	47,533	15,602	8,948	2,346
Cattle bones.....			15,950	293				
Cattle hides.....	932,963	230,438	393,670	83,221	2,983,684	1,083,507	974,026	254,943
Cattle horns.....							8,904	233
Chicle.....	170,445	45,440	565,753	150,616	166,665	49,170	509,113	145,008
Cocoa.....			87,835	4,043	72,400	17,119		
Coffee.....					122,116	24,468		
Cotton.....					312	97		
Deer horns.....					133	9	344	15
Deerskins.....	49,368	9,890	4,809	731	171,134	41,481	56,170	14,540
Drums (empty).....					4,800	793	5,346	
Goatskins.....					10,621	5,499	3,489	1,320
Gold.....		116,569		135,490	1,128	237,982	2,139	492,708
Household effects.....				756	756	386		
Jewelry waste.....							683	392
Mangle bark.....			11,666	71				
Old copper and metals.....					2,476	215		
Rice.....					218	39		
Rubber.....	340,237	162,819	64,165	23,482	337,792	122,245	209,022	50,016
Salted meat.....			668	65				
Samples of timber, etc.....							282	10
Sernamby.....			4,312	1,070	20,086	4,813		
Silversmith sweepings.....					854	202		
Skimmings.....					1,731	117,101	1,365	22,064
Tamarind.....			19	3				
Tonka beans.....	275	833	607	243	4,051	2,913	2,819	1,597
Typewriters.....							54	65
Water-hog skins.....					484	28		
Wild-animal skins.....					194	357		
All other articles.....		3,451		99,243				
Total.....		945,046		710,330	4,776,503	2,151,471	2,160,281	1,199,953

To show the relative importance of imports from and exports to the various countries, the following table is given for the year 1919:

[Kilo=2.2046 pounds; bolivar=\$0.193.]

Countries.	Imports from—		Exports to—	
	Kilos.	Bolivars.	Kilos.	Bolivars.
Barbados.....			308,000	77,000
Colombia.....	67,447	134,416	9,613	19,189
Curacao.....			64,041	162,123
France.....	55,216	288,236	11,671	207,544
French Guiana.....			675,468	177,896
Great Britain.....	309,662	1,711,578	594,362	3,074,096
Italy.....	4,987	26,056		
Netherlands.....	21,114	48,074		
Spain.....	19,354	46,348		
Trinidad.....	873,842	3,121,460	2,772,511	3,795,765
United States.....	4,288,261	7,213,240	2,234,639	9,963,500
Total.....	5,639,883	12,589,408	6,659,705	17,477,093

During the year 1919 the customhouse of Barrancas, for export only, sent 877,415 kilos of exports, valued at 218,700 bolivars (\$42,209), to Barbados; 312,140 kilos, valued at 78,706 bolivars (\$15,190), to French Guiana; and 1,598,558 kilos, valued at 854,173 bolivars (\$164,855), to Trinidad. San Felix exported a total of 12,464 kilos, valued at 3,535 bolivars (\$682), to Trinidad exclusively.

FUTURE ASPECTS OF TRADE WITH CIUDAD BOLIVAR.

It has been seen that the foreign trade of Venezuela and its control are dependent upon transportation service and markets for the export products of the various regions into which the country is divided commercially. The future of American trade with Ciudad Bolivar depends upon the ability of this country to continue to absorb the greater part of the products exported, at a fair market price, and to provide rapid ocean freight service to and from the port of transshipment—Port of Spain, Trinidad. The keynote of this trade in merchandise and supplies should be a more intensive study of the details of the market conditions and the demand for goods, a wider knowledge of the district and its economic conditions, and greater attention to the small details of exporting, such as packing, invoicing, packing lists, etc.

Nearly all of the smaller merchants of the interior who now buy at wholesale from the larger importers in Ciudad Bolivar on long-term credits (which are universally based on the crop, or harvest, seasons of balata and rubber) want to become direct importers, but they have not sufficient capital, as a rule, to permit them to do this with safety. Unless resident agents or representatives of the firm are on the ground, it is thought better to protect the large importer, who has capital sufficient to enable him to meet readily the demands of the usual terms of export shipments from the United States (90 to 120 days from date of invoice), and let him, in turn, take care of the dealer of the interior, whom he has a much better opportunity to know intimately. The very character of the trade of the district makes credit risks very great; there is constant speculation in articles of both import and export, and the general conditions of the rubber and balata markets make credit extensions hazardous in the extreme, except in dealing with long-established and well-known houses.

TRANSPORTATION.

OCEAN STEAMSHIP SERVICE.

LINES TOUCHING AT VENEZUELAN PORTS.

Venezuela is easily accessible by water by reason of its extended coast line, numerous harbors, and navigable rivers. La Guaira, the seaport of the capital, is the most important port of call for regular steamers. The next important port is Puerto Cabello, then Carupano, Guanta, and Cumana (Puerto Sucre) on the Caribbean coast line, while Ciudad Bolivar, 270 miles from the mouth of the Orinoco, is the port for the great Bolivar and Amazonas territory. Maracaibo, on Lake Maracaibo, is the most important of inland ports, and is accessible for ocean-going steamers of less than 11-foot draft, being connected with the Caribbean Sea by a channel 34 miles long and 5 to 6 miles wide.

Coastwise water traffic is carried by the vessels of the national steamship company, the *Compañía Venezolana de Navegación*, which also controls water traffic on the Orinoco and on Lake Maracaibo. Semimonthly service is maintained along the coast between Maracaibo and Ciudad Bolivar, touching at La Vela de Coro, Puerto Cabello, La Guaira, Guanta, Puerto Sucre, Carupano, Rio Caribe, Cristobal Colon, and Port of Spain, Trinidad (British West Indies), whence connection is made by vessel of the same company for the trip to Ciudad Bolivar up the Orinoco.

Rapid steamer connections for the north or south Atlantic are afforded by the steamers of the various European lines touching along the coast, the transfers being made at Trinidad, Martinique, or Barbados.

Ocean communication with foreign countries was maintained prior to the war by nine steamship companies, as follows:

The *Red "D" Line* of steamers, an American company of New York, maintained a weekly passenger and freight service between New York, La Guaira, Puerto Cabello, and Curaçao, Dutch West Indies, transfer for Maracaibo being effected at Curaçao.

The *Royal Mail Steam Packet Co.*, a British Southampton line, with vessels sailing every two weeks from Barbados, touched at Carupano, La Guaira, and Puerto Cabello, and connecting with Curaçao, Colombian ports, and the Panama Canal.

The *Harrison Steamship Co.*, a British line from Liverpool, touched twice a month for freight only at La Guaira and Puerto Cabello, with way ports and the Canal.

The *Compagnie Générale Transatlantique*, a French line from St. Nazaire and Bordeaux, touched at La Guaira twice a month and once at Marseille.

The *Koninklijke West Indische Mail Dienst (Royal Dutch West India Mail)*, a Dutch line from Amsterdam, maintained semi-monthly service touching at Carupano, Guanta, La Guaira, and Puerto Cabello, with connections at Curaçao for Maracaibo, and a route by way ports of Colombia to the Canal and the Atlantic coast of Central America.

Vessels of the *Hamburg-American Line*, of Germany, arrived twice a month at La Guaira and Puerto Cabello.

The *Compañía Transatlántica Española*, a Spanish line from Barcelona, touched once a month at La Guaira and Puerto Cabello, taking in Curaçao, Colombian ports, the Canal, and a route to Cuba, etc.

La Veloce, an Italian line from Genoa, touched once a month at La Guaira and Puerto Cabello, with a route via Curaçao to Colombian ports and the Canal.

During the war the total volume of tonnage materially decreased. Germany disappeared from the list entirely, and the tonnage of the other European countries was heavily curtailed, whereas there was an appreciable gain for the United States and a notable increase in Venezuelan coastwise trade. Since the armistice the temporary shortage of tonnage has been relieved with the reappearance of the usual number of French, Dutch, British, Italian, and Spanish boats, the Royal Dutch West India Mail being especially active with the addition of new steamers and more frequent service.

Increased shipping facilities since the war have been provided by the inauguration of the service of the new Italian company known as *Compañía Transatlántica Italiana*, with 12 new motor vessels either already in service or under construction, and with two 12,000-ton Diesel-engined freighters now operating between Genoa and Callao in Peru, via the West Indies, Venezuelan and Colombian ports of call, Curaçao, and the Canal.

The *Johnston Line* of steamers has also extended its service from Scandinavian ports and New York to Trinidad, Venezuelan and Colombian ports, and the Canal, with a monthly freight service; and cement, paper, and iron manufactures are now coming in from Sweden. The Banco Mercantil Americano de Caracas acts as agent for this line.

The *Leyland Line*, of Liverpool, has also placed the Venezuelan ports of La Guaira and Puerto Cabello on a monthly sailing list for freight.

American tonnage and ocean service was increased during the last year of the war by the inauguration of the service of the *New Orleans & South American Steamship Co.* (owned by W. R. Grace & Co.) between New Orleans, the West Indies, and Venezuelan, Colombian, and Atlantic ports of Central America, touching at the canal (Colon), with two steamers, one for freight only and one for both passengers and freight, affording a service with New Orleans semimonthly for freight and once a month for passengers.

The Norwegian ships chartered by the *Caribbean Steamship Co.* (Alejandro Angel & Co, Colombians, of New York) also made Venezuelan ports of call beginning in the early part of 1920, maintaining a freight service for transfer of cargo from Maracaibo for New York by one small boat operating between Curaçao and Maracaibo.

American Minister Preston McGoodwin announces the establishment of a regular steamship service between New York and the ports of Venezuela by the *Royal Dutch West India Mail*. The itinerary will include Amsterdam, Paramaribo, Georgetown, Barbados, Port of Spain, Carupano, Porlamar, Cumana, La Guaira, Puerto Cabello,

Curaçao, and New York. On the return trip vessels will make regular stops at one of the northern ports of Haiti. The service will be fortnightly.

As fast as normal conditions were established, the European companies were quick to replace their former service and even added to it, as has been shown. The United States has only one line (the Red "D" line) carrying passengers between Venezuelan ports and New York, and the vessels of this line are inadequate. Trade follows transportation facilities, and there exists in Venezuela an insistent demand for better ocean service with the United States, and more especially better passenger accommodations. No more important measure can be recommended for the furtherance of American trade with this region than the establishment of a new and active line of steamers which would touch frequently at West Indian ports, Barbados, Trinidad, the Venezuelan ports of Carupano, La Guaira, Puerto Cabello, Curaçao, Colombian ports, and the Canal, swinging around in a big circle as the European boats always do in order to collect enough return cargo to fill up the ships for the home passage. Fast and well-appointed steamers should be put on the run to and from New York. Without such service, a large portion of the present trade will drift back to European channels, more especially if Europe takes a renewed interest in Venezuelan export products.

The interests of Venezuela would be distinctly served by a reduction of the port and tonnage dues at La Guaira, the principal port of import and export, and by reforms in the present too strict system of fines for slight infractions of the laws governing shipping. Simultaneous loading and unloading of cargo is now permitted by the regulations, and this measure has effected great economy of time and expense for the companies engaged in the trade with Venezuela.

Uniform port and customs regulations affecting shipping throughout the Caribbean Islands, Venezuela, Colombia, and the Central American countries would do much to correct the present state of confusion and difficulty always encountered on account of the many conflicting and different regulations in force at the various ports of call.

(Descriptions of Venezuelan harbors, their facilities, commerce, regulations, etc., are contained in the several district reports, beginning on p. 118.)

COMPETITIVE FREIGHT RATES AND COMBINATION TO CONTROL OCEAN FREIGHT.

In December, 1919, the Venezuelan Subcommittee of the West Indies Atlantic Steamship Companies, representing the Royal Mail Steam Packet Co., the Compagnie Générale Transatlantique, the Frederick Leyland line, Thos. & Jas. Harrison, La Veloce, the Compañía Transatlántica Española (Barcelona), and the Royal Dutch West India Mail, published a notice to shippers advising them that the secretary in London of the Committee of the Association of West India Transatlantic Steamship Companies stated that the terms of the circulars regarding refund of freight charges must always be applied strictly, and that, in consequence, any shipments made on the steamers of competing lines would cause the loss to the shipper of the refund made on shipments on the vessels in the association.

This association refund is understood to be a rebate of 10 per cent of the freights paid during the year to the steamship companies belonging to the association, provided the shipper makes no other shipments on competing lines. This arrangement existed prior to the war and has since been renewed. The object of this association is to prevent competition between steamship companies serving the same ports, a minimum freight rate being fixed by the association and its members binding themselves not to charge less than the minimum established. The combination affects not only steamers operating between European ports and Venezuela, but those to the United States as well, because the Leyland and Harrison lines go from Venezuelan ports to the Canal and then to the Gulf ports of the United States. The new Italian line, the *Compañía Transatlántica Italiana*, which is operating the new motor ships in the trade, and which also includes the ports of the west coast of South America, has not yet entered the association mentioned.

VENEZUELA'S TRADE WITH NEW ORLEANS.

For more than 10 years many of the exporting firms of Venezuela have been desirous of entering the New Orleans market with hides, coffee, cacao, divi-divi, guano, etc., being convinced that it would be to their advantage to find a competing market in the United States, as heretofore all shipments have gone exclusively to New York, with few exceptions. Prior to the establishment of the service of the New Orleans & South American Steamship Co. (W. R. Grace & Co.) in 1918, there had been no regular service with New Orleans; several Venezuelan firms had imported rice, flour, and drugs from New Orleans and Gulf ports by means of transshipment at Colon, but this route proved to be very unsatisfactory on account of the long delays encountered at Colon, and this trade, started in 1915, had to be abandoned.

One of the greatest advantages to Venezuelan shippers in selling their export products in New Orleans is that warehouse charges and the freight rates to inland points are much cheaper than those in New York. On account of the heavy demand in New Orleans for hides, and the fact that they are bought at the dock, thereby avoiding warehouse charges, exporters are encouraged to develop this outlet for their exports. St. Louis is one of the world's heaviest purchasers of hides and divi-divi; a very important market for hardwoods, and a distributor of coffee and other products such as Venezuela furnishes, with the added advantage of cheap water transportation from New Orleans. American exports that can advantageously be shipped by way of New Orleans are barbed wire, hardware, drugs and medicines, machinery, refined petroleum products, textiles, and general merchandise. Foreign rice can be shipped by this route more cheaply than from New York.

The difficulties presented to the steamship companies considering this trade consist chiefly of the trouble experienced in securing return cargoes. In 1917 the Mexican Fruit & Steamship Co. experimented with three boats in this route, and the United Steamship Co. sent a freighter down in 1916. The market for Venezuelan products has always been chiefly in New York, because New York has possessed the business machinery to take care of the prompt disposal of

imports of hides, coffee, cacao, rubber, etc. What seems to be most needed is the provision of such machinery at New Orleans whereby the export houses will also buy or handle Venezuelan, Colombian, and Central American products, disposing of them in the great markets of the Middle West. It is to be hoped that the efforts of the Mississippi Valley Association will result, in time, in the formation of adequate facilities for such an exchange, because, as long as New York and European ports continue to take the bulk of the exports from the Caribbean route covered, the countries in question will also carry their buying accounts at the places where they sell their export products.

RAILWAYS.

EXTENT AND CHARACTER OF LINES—FREIGHT AND PASSENGER RATES.

Venezuela has 11 short lines of railways, the longest of which, the Great Railway of Venezuela, has a total rail length of 178.9 kilometers (1 kilometer=0.62 mile), with 4.81 kilometers in one short branch line. The total rail length of the existing lines is 994.34 kilometers, or 530 miles, making 7 feet of railway for every square mile of territory, and 11.8 inches per capita of the population. To this total there should be added the 7 kilometers of the electric suburban line along the beach from La Guaira to Macuto; the 5.5 kilometers of the suburban line from Caracas to the suburb of El Valle; the 16 kilometers of the narrow-gauge line serving the loading port of the Guanoco (Bermudez Lake) asphalt deposits in the State of Sucre; the 3 kilometers of the line serving the asphalt lake of Guanipa; and the 15 kilometers serving the oil fields of the Caribbean Petroleum Co. from the wells to the Lake Maracaibo loading port of San Lorenzo, where the small refinery is also located. Of the total given above, 44 kilometers should be deducted from the mileage in actual operation, as the old narrow-gauge line from the asphalt deposits of Inciarte to the River Limon in the State of Zulia is not in operation at the present time, though the prospective opening of the near-by coal fields by the Caribbean Coal Co. will put this road in active service again.

The average freight rate is 30.5 cents per ton-mile; the average passenger rate is 6.57 cents per mile for first class and 4.6 cents per mile for second class. All lines are of narrow gauge, the various widths being 3 feet 6 inches, 1 meter (39.37 inches), 3 feet, and 2 feet. As a rule there is no interchange of cars between the various roads where connection is made. Freight rates are based upon weights without regard to class or value of the merchandise carried, and no reductions are made for carload or other quantity shipments. With one exception, the equipment is of European type and manufacture. With two exceptions, the roads are short lines from a port to a city or a more populous district on the highlands not far from water transportation by river to tidewater.

Practically all of the existing lines were built between 1881 and 1893 under Government subsidies and guaranties of interest upon the capital invested. This policy was greatly modified by the laws of 1892 and 1897, with the result that not a single mile of track was constructed from that time until the new law of 1912 was passed, after which some extensions of the existing lines were made in 1914.

In 1895 the Government raised by loan the sum of 50,000,000 bolívars (\$9,650,000), with which three of the least profitable roads were taken over, the accrued debt upon the guaranties paid, and the guaranteeing clauses canceled in all contracts except that of the Puerto Cabello & Valencia Railway, which in 1916 accepted a cash payment of £190,000 (\$92,635) in payment of all accrued indebtedness and for the cancellation of the interest guaranty for the future.

On several of the main roads traffic is lighter now than 25 years ago, and notwithstanding the fact that rail transportation of freight is as expensive as that of the cart and pack mule, scarcely any of the enterprises have earned a fair return on their investment, though certainly transportation has been quickened and rates have been steadied if not cheapened. It is very probable that in several cases capital investments have been smaller and earnings higher than the statistics indicate.

The reasons for the conditions shown lie in the sparseness of the population and its distribution in a long, narrow strip of territory skirting the seaboard (leading to the construction of short, unconnected lines), in the very moderate producing and purchasing power of the people, and in the general refusal of the lines to grant low rates for commodities of small value.

TOTAL CARGO MOVEMENT.

In 1915 the total cargo movement over all lines was 280,621 metric tons, which, on a basis of 300 working days per year, gives a daily movement of only 1½ tons per mile of line. The total movement of freight in 1919 was as follows:

	Metric tons.
La Guaira & Caracas Railway-----	76, 334
Great Railway of Venezuela-----	60, 495
Carenero Railway-----	6, 922
Puerto Cabello & Valencia Railway-----	55, 120
Santa Barbara & El Vigía Railway-----	17, 821
Bolívar Railway-----	38, 820
Tachira Railway-----	19, 561
Central Railway of Venezuela-----	22, 790
La Ceiba Railway-----	21, 706
Guanta-Barcelona Railway-----	28, 862
La Vela & Coro Railway-----	10, 828
Maiquetía-Macuto (La Guaira) Railway-----	2, 562
Total-----	361, 821

EXTENSIONS AND NEW CONSTRUCTION.

The Tachira Railway (Gran Ferrocarril del Tachira), now operating between the Catatumbo River and La Uruca, in the direction of San Cristobal, near the Colombian frontier, holds a concession, dating from 1913, for the extension of its line to the city of San Cristobal, and a preferential right to build from there to Periquera at the junction of the Apure and Uribante Rivers. Such an extension would cross the low watershed of the southern part of the Venezuelan Andes at a low elevation and would extend out onto the cattle plains.

The Bolívar Railway contemplates several extensions and branches at some future time, including a new connecting line between Barquisimeto and Valencia.

The Great Railway of Venezuela (German road) has a concession for an extension from Valencia to San Carlos out on the western part of the llanos, and has the preferential right to construct a line from Cagua, via Villa Cura and San Juan de Los Morros, to San Fernando de Apure, crossing the great plains and connecting the Caribbean seaboard with the heart of the Orinoco country.

A railway 108 kilometers long from Valencia westward through Montalban to Nirgua and Barquisimeto has long been projected and planned, but the country is rough and broken, for the most part, and it is doubtful whether such a line could be built cheaply enough to pay. The manager of the Puerto Cabello & Valencia Railway has a concession for a cableway over this route.

The excellence of the harbor of Guanta has suggested extensions of the existing railway southward into the plains and through to Ciudad Bolivar, with a branch to Maturin, but the country to be traversed is little inhabited and the line would have to await a problematical development of the country before returns could be realized.

A new line from the coal fields of the River Limon district to the new proposed port of Castilletes has been contracted for with the Government by the Caribbean Coal Co., an American concern. Coal and asphalt would be practically the only available freight.

Possibly the next railway development to be actually carried out will be the proposed electric railway between Maracay and the new proposed port of Turiamo Bay, about 20 miles by water east of Puerto Cabello—Turiamo Bay having been selected as the new port site in preference to Ocumare de la Costa by the American engineers in charge of the preliminary survey work. The proposed line would connect Maracay with the new port on the Caribbean, the route following very closely the present automobile road across the Coast Range. The road distance between Ocumare and Maracay is 58.7 kilometers, and the highest elevation is approximately 3,600 feet. The powerful political and closely allied cattle interests of the country are planning to make Maracay an industrial center, with new cotton mills and other industries, and also to erect a new beef-chilling plant at the new port. Maracay controls the outlet for beef cattle from the llanos. It is proposed to make Turiamo a free port equipped with bonded warehouses, etc. Sufficient hydro-electric power can be developed along the right-of-way to operate the railway, which will be of narrow gauge, and for the proposed industrial enterprises planned for the town of Maracay.

A concession was arranged by an American promotor in 1919 for a new electric line from the river port of San Felix (Las Tablas) on the Orinoco to the El Callao gold fields in Venezuelan Guiana, using the power from the great falls of the Caroni River, but the proposition was allowed to lapse by the failure to provide for representation at the last meeting of the Venezuelan Congress after the Minister of Fomento had agreed to grant the concession.

COMPETITION FROM CART ROADS.

Five of the principal railways of Venezuela are practically paralleled by cart roads over which freight is transported in the com-

mon two-wheeled mule carts of the country as cheaply as over the railways, this traffic cutting heavily into the receipts of the roads. Even on the long 111-mile haul between Caracas and Valencia (the cart road is somewhat shorter) these carts compete with the German railway successfully. Merchandise and produce is hauled at the same freight rate per ton as the railways charge, with the additional advantage that goods are delivered directly to store or warehouse, there being no cartage charges from a terminal to the center of the city.

The Government is carrying out a very extensive program of road building and improvement of existing highways, and the extension of the roads into the practically undeveloped interior will, in time, react favorably for the railways in providing additional cargoes. It is not possible to give actual tonnage figures showing the exact extent to which this competition by cart enters into the total tonnage movement of the various districts, but a conservative estimate might place it at about one-half.

RAILWAY LAWS.

The law of June 13, 1912, emphasized the provision that concessions for new railways in the country must comply with the clause requiring that exact data be given as to when construction will commence and finish. This same law also provided for a preliminary deposit of 20 bolivars (\$3.86) per kilometer (1 kilometer=0.62 mile) of projected line, plus such sums in guaranty as Congress shall determine (limited to 50,000 bolivars, or \$9,650). Another important provision of the new law was that all new construction was to be of "standard" gauge of the United States and Canada.

The most recent legislation on railways was the law passed on June 4, 1918, which reenacted the law of 1917. One of the principal clauses of this law, in conjunction with its provisions regarding new companies, emphasizes the policy of the Government to avoid giving concessions which may, at any time, be the subject of diplomatic claims.

The law of June 4, 1918, passed by the Congress of Venezuela and approved by the President on June 4, 1918, refers to railway concessions in Venezuela, and contains the following articles that are new or change similar provisions in old laws:

ART. 3. The Government of the Republic will guarantee no interest on capital invested in the construction of railways.

ART. 11. A contractor for any railway is obliged to make a cash deposit of an amount proportionate to the length of the line and the width of the gauge, as follows: 0.610-meter gauge, 600 bolivars (\$116) per kilometer; 0.915-meter gauge, 900 bolivars (\$174) per kilometer; 1.07-meter gauge, 1,000 bolivars (\$193) per kilometer; 1.435-meter gauge, 1,400 bolivars (\$270) per kilometer. The Federal Executive may reduce this deposit at his discretion by as much as 15 per cent.

ART. 25. The Federal Executive may or may not reserve in contracts the right of buying the railway and its equipment upon six months' notice to the company. It is optional to the Government to make this purchase upon appraisal, paying a 20 per cent premium on the value of the enterprise, or by paying the price represented by the value of the capital stock at the time of purchase with a premium of 10 per cent. In all cases of purchase, the appraisal shall be made by experts, and the purchase price shall be paid to the company upon transfer of property.

ART. 33. The Federal Executive shall have the power to require a reduction of rates when the annual tonnage transported by the road shall exceed a certain

amount to be fixed in each case. For the purpose of this reduction the following rules shall be followed: If the average freight carried in any year shall exceed the amount fixed, the rate for the subsequent years shall be the reduced minimum rate; but if in any of the following years the annual tonnage shall again fall to a lesser amount, the rate in force for the succeeding year shall be the preceding maximum rate, and so on, successively.

ART. 43. In contracts for building railways there shall be granted the right to import, free of duty, during the first 25 years of the concession, rolling stock, engines, tools, utensils, and the necessary implements for the building, exploitation, and maintenance of the line and its branches, it being understood that said franchise shall lapse if it be proved that any of the exempted goods have been designed for uses other than those of the company which obtained the contract, without the express permission of the Ministry of Public Works. For the purpose of the exemption from customs duties, the corresponding provisions of the Code of Finance must be complied with [that is, all articles imported must be declared in the usual manner].

The law of June 12, 1917, and the one quoted above contain the following general essential features having to do with the construction, operation, and equipment of railways by domestic and foreign companies and individuals:

(1) That all enterprises be approved by the National Congress. That all controversies be settled in the Venezuelan courts. That at least one-half of the employees be native Venezuelans. That no interest be guaranteed by the Government upon the capital invested.

(2) That complete plans of any railway project be submitted to the Minister of Public Works before the beginning of operations, and that deposits of money be placed in the National Treasury as a guaranty of integrity.

(3) That construction regulations and standard measurements be carefully observed as well as provisions for roadbeds, crossings, etc.

(4) That rival lines, in close proximity to those already constructed, be prohibited, and that branches or prolongations of existing lines be permitted in accordance with regulations.

(5) That the right be reserved by the National Government to take over all railways after 40 years of service, if desired. (See provisions for payment, in art. 25, law of June 4, 1918.)

(6) That rates fixed by owners be approved by the ministry, that mails be carried free, and that reductions be allowed to Government employees, as well as on materials destined for the improvement of public works.

(7) Privileges: That no excessive taxes be levied on the railways; that a fair proportion of the unclaimed public lands be ceded to the new railways; that free transportation be allowed for railway material; that railways be allowed to erect telegraph and telephone lines, provided that the Government be granted free use of them; and that the railway employees be exempt from military duty except in the case of international war.

LIST OF LINES—TECHNICAL DATA—CAPITALIZATION.

The total rail length of the roads of Venezuela in 1920 was 1,039 kilometers (1 kilometer=0.62 mile), distributed as follows:

	Kilometers.	Miles.
La Guaira & Caracas Railway: Main line-----	36. 65	22. 77
Great Railway of Venezuela:		
Main line, Caracas to Valencia-----	178. 90	
Branch, town of Guigue to Lake Valencia----	4. 81	
	<hr/> 183. 71	114. 15

TRANSPORTATION.

341

	Kilometers.	Miles.
Puerto Cabello & Valencia Railway: Main line----	54. 75	34. 02
Bolivar Railway:		
Main line, Tucacas to Barquisimeto-----	163. 25	
Branch, Palma Sola to San Felipe-----	42. 00	
Branch, El Hacha to Aroa Mines-----	13. 59	
Branch, "La Cumaragua" Mine-----	3. 20	
Branch, kilometer 13, quarry and timber-----	10. 00	
	232. 04	144. 41
Tachira Railway: Main line, Encontrados (Rio Catatumbo) to Tachira Station (La Uraca)-----	120. 00	74. 56
La Ceiba Railway:		
Main line, La Ceiba to Motatan-----	81. 36	
Branch, Central La Ceiba (sugar mill)-----	3. 67	
	85. 03	53. 01
Central Railway of Venezuela: Main line, Caracas to Yare-----	73. 48	45. 66
Carenero Railway: Main line, Carenero to Guapo.	54. 40	33. 80
Guanta-Barcelona Railway:		
Main line, Guanta to Barcelona-----	18. 81	
Branch, Barcelona to Naricual mines-----	17. 60	
	36. 41	22. 62
Santa Barbara & El Vigia Railway: Main line, Santa Barbara (Rio Escalante) to El Vigia-----	60. 00	37. 28
La Vela & Coro Railway: Main line, La Vela to Coro-----	13. 37	8. 31
Electric suburban line, Maiquetia to Macuto: Main line (formerly a steam line)-----	7. 00	4. 35
Electric suburban line, Caracas to El Valle: Main line (formerly a steam line)-----	5. 50	3. 42
Zulia Asphalt Co. Railway: Main line, Inciarte to Rio Limon-----	44. 00	27. 34
Bermudez Lake Asphalt Railway: Main line to Cano San Juan-----	15. 00	9. 32
Guanipa Asphalt Line (Maturin)-----	3. 00	1. 86
Caribbean Petroleum Co.'s Railway: Main line, lake port of San Lorenzo to oil wells-----	15. 00	9. 32
Total-----	1, 039. 34	646. 20

NOTE.—The Central Railway of Venezuela has under construction its extension from Yare to Ocumare del Tuy, a distance of 10 kilometers.

The following table gives technical data for the Venezuelan railways:

[Meter=3.28 feet.]

Railways.	Gauge.		Rail weight.	Maximum grade.	Minimum curve radius.	Bridges.		Tunnels.	
	Meters.	Feet.				Number.	Length.	Number.	Length.
			Pounds per yd.	Per ct.	Meters.		Meters.		Meters.
La Guaira & Caracas Railway.....	0. 915	3	65	3. 75	43	15	281. 5	8	379. 5
Great Railway of Venezuela.....	1. 067	3½	47	2. 20	75	219	4, 656. 4	86	6, 249. 15
Puerto Cabello & Valencia Railway.....	1. 067	3½	55	8. 00	91. 5	33	915. 5	1	76. 25
Bolivar Railway.....	. 610	2	48	5. 27	46. 83	518	2, 119. 07	.....	.....
Tachira Railway.....	1	3. 28	40	2. 60	75	24	785	1	36
La Ceiba Railway.....	. 915	3	40	3. 00	80	37	1, 356	.....	.....
Central Railway of Venezuela.....	1. 067	3½	60	4. 00	50	75	724	14	481. 8
Carenero Railway.....	. 915	3	40	3. 00	84	77	877	.....	.....
Guanta-Naricual (Barcelona) Railway.....	1. 067	3½	40	2. 50	125	6	265	.....	.....
Santa Barbara & El Vigia Railway.....	1	3. 28	40	2. 00	100	15	138	.....	.....
La Vela & Coro Railway.....	. 915	3	40	. 84	117	8	366	.....	.....
Electric, Maiquetia-Macuto.....	. 915	3	36	3. 00	80	10	50	.....	.....

342 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

The following table shows the capitalization in 1920 of the various lines:

[Bolívar=\$0.193; kilometer=0.62 mile.]

Railways.	Initial capital.	Length, in kilometers.	Average cost per kilometer.
	<i>Bolívars.</i>		<i>Bolívars.</i>
La Guaira & Caracas Railway.....	18,180,000	36.65	496,043
Great Railway of Venezuela.....	179,000,000	178.90	441,587
Puerto Cabello & Valencia Railway.....	20,200,000	54.75	368,950
Bolívar Railway.....	30,956,500	176.59	175,301
Tachira Railway.....	11,200,000	120.00	93,333
La Ceiba Railway.....	8,000,000	81.36	98,328
Central Railway of Venezuela.....	19,650,000	56.00	350,893
Carenero Railway.....	4,000,000	54.40	73,529
Guanta-Naricual Railway.....	5,199,745	36.41	142,811
Santa Barbara & El Vigia Railway.....	3,021,880	60.00	50,365
La Vela & Coro Railway.....	1,040,000	13.37	77,786
Maiquetia-Macuto.....	500,000	7.00	71,429
Total (or average).....	200,948,125	875.43	229,542

¹ The capital of this "German railway" has since been reduced. See p. 343.

² The capital invested in the Guanta-Naricual Railway includes the cost of docks, buildings, customs warehouses, etc.

CAPITALIZATION BY NATIONALITY.

Railways.	Venezuelan capital.		Foreign capital.		
	Government.	Private.	British.	German.	French.
	<i>Bolívars.</i>	<i>Bolívars.</i>	<i>Bolívars.</i>	<i>Bolívars.</i>	<i>Bolívars.</i>
La Guaira & Caracas Railway.....			18,180,000		
Great Railway of Venezuela.....				79,000,000	
Puerto Cabello & Valencia Railway.....			20,200,000		
Bolívar Railway.....			30,956,500		
Tachira Railway.....		11,200,000			
La Ceiba Railway.....		8,000,000			
Central Railway of Venezuela.....			19,650,000		
Carenero Railway.....					4,000,000
Guanta-Naricual Railway.....	5,199,745				
Santa Barbara & El Vigia Railway.....	3,021,880				
La Vela & Coro Railway.....	1,040,000				
Maiquetia-Macuto.....			500,000		
Total.....	9,261,625	19,200,000	89,486,500	79,000,000	4,000,000

The following table shows the present actual investment in the various railways and the percentages of profit on the sums invested:

[Bolívar=\$0.193.]

Railways.	Investment.	Percentage of profit.		
		1917	1918	1919
	<i>Bolívars.</i>			
La Guaira & Caracas Railway.....	18,180,000	6.17	4.49	7.03
Great Railway of Venezuela.....	26,250,000	4.20	5.14	7.05
Puerto Cabello & Valencia Railway.....	16,160,000	3.37	3.05	4.01
Bolívar Railway.....	30,956,500	4.71	2.35	2.64
Tachira Railway.....	7,000,000	8.65	9.76	13.51
La Ceiba Railway.....	8,000,000	5.13	5.23	9.63
Central Railway of Venezuela.....	14,792,712	3.06	2.49	1.10
Carenero Railway.....	4,000,000	0	.01	.04
Guanta-Naricual Railway.....	5,199,745	.05	.06	.02
Santa Barbara & El Vigia Railway.....	3,021,880	6.10	6.10	10.89
La Vela & Coro Railway.....	1,040,000	1.69	.08	0
Maiquetia-Macuto.....	1,383,750	5.66	6.60	8.98
Total.....	135,964,567	4.40	3.78	5.19

The Great Railway of Venezuela (German railway) reduced its capitalization in 1920 from 79,000,000 bolivars to 21,000,000 marks, which at par is equivalent to 26,250,000 bolivars.

The Puerto Cabello & Valencia Railway also reduced its capital from 20,200,000 to 16,160,000 bolivars, the capital of the company now appearing (in English pounds) as follows:

46,000 shares common stock at £10 each.....	£460,000
First-mortgage bonds.....	180,000
	<hr/> 640,000

The Central Railway of Venezuela reduced its capital in 1918 from 19,650,000 to 14,792,712 bolivars, the capital of the company now appearing as follows (converted at the rate of 25.25 bolivars to the pound):

Issued 200,000 shares of stock of £1 each.....	£200,000
First-mortgage bonds of £10 each.....	251,700
Second-mortgage bonds of £10 each.....	134,150
	<hr/> 585,850

The following table shows the "coefficients of operation" (the percentage of operating expense with relation to gross income) of the Venezuelan railways:

Railways.	1917	1918	1919
	<i>Per cent.</i>	<i>Per cent.</i>	<i>Per cent.</i>
La Guaira & Caracas Railway.....	49.00	54.15	48.53
Great Railway of Venezuela.....	60.06	55.08	50.99
Puerto Cabello & Valencia Railway.....	56.81	59.32	55.95
Bolivar Railway.....	56.73	71.73	71.65
Tachira Railway.....	54.83	45.00	36.81
La Ceiba Railway.....	58.00	57.35	45.67
Central Railway of Venezuela.....	63.46	72.26	86.46
Carenero Railway.....	99.97	99.94	99.53
Guanta-Naricual Railway.....	96.85	98.16	96.29
Santa Barbara & El Vigia Railway.....	65.92	59.11	50.32
La Vela & Coro Railway.....	68.80	98.14	102.40
Maquetia-Macuto Electric Line.....	56.43	54.81	54.06

For freight and passenger tariffs of the Venezuelan railways, the reader is referred to "Los Ferrocarriles de Venezuela," an official publication of the Ministry of Public Works (Caracas, 1920), which may be consulted at the Bureau of Foreign and Domestic Commerce or any of its district or cooperative offices.

Below are certain significant figures for the year 1918, covering the 12 active lines:

Years.	Passengers.	Cargo transported.	Receipts.	Expenditures.
		<i>Metric tons.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1908.....	413,004	183,845	8,918,561	6,259,861
1909.....	444,162	170,894	8,781,479	6,039,269
1910.....	507,061	209,206	9,438,801	6,181,833
1911.....	575,074	229,453	10,790,199	6,219,525
1912.....	650,492	258,059	12,984,562	7,005,480
1913.....	612,404	253,000	13,266,259	7,069,344
1914.....	737,741	268,505	12,878,699	7,582,094
1915.....	808,803	280,620	12,527,854	7,202,551
1916.....	884,455	299,112	12,928,170	7,674,701
1917.....	1,006,006	399,749	15,235,999	8,317,399
1918.....	1,018,258	394,076	13,318,353	8,179,896
1919.....	1,201,668	361,821	16,410,102	9,469,279

344 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

The following table shows the rolling stock of the various roads:

Railways.	Locomotives.		Cars.		Number of trains daily.	Distance run daily.	Average speed per hour.
	Number.	Weight.	Freight.	Passengers.			
		<i>Tons.</i>				<i>Kilometers.</i>	<i>Kilometers.</i>
La Guaira & Caracas Railway....	15	558	117	28	10	360	17
Great Railway of Venezuela.....	17	656	152	31	16	802	30
Central Railway.....	9	290	51	13	44	500	20
Malquetia-Macuto.....	2	32	1	6	8	103	15
Puerto Cabello & Valencia Railway.	10	330	97	13	2	108	25
Carenero Railway.....	5	90	37	5	1	109	20
La Vela & Coro Railway.....	1	15	1	1	2	52	20
Bolivar Railway.....	15	309	277	9	2	348	20
La Ceiba Railway.....	6	135	53	7	2	326	20
Tachira Railway.....	7	210	24	7	2	458	15½
Guanta-Naricual Railway.....	4	84	6	8	1	170	20
Santa Barbara & El Vigia Railway.	5	126	22	4	2	74	15
Total.....	96	2,885	838	132	92	3,410	.....

Following is a synopsis of certain data for five of the more important Venezuelan railways, by selected years, from the time they began operations:

LA GUAIRA & CARACAS RAILWAY.

Years.	Number of passengers.	Product of passenger traffic.	Freight transported.	Total receipts.	Total expenses.
		<i>Bolivars.</i>	<i>Metric tons.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1883.....	16,879	149,871	7,574	440,838	338,547
1885.....	50,505	432,285	59,181	2,347,690	1,007,086
1890.....	74,984	603,496	81,748	3,330,902	2,144,609
1895.....	55,159	451,719	73,294	2,728,677	1,350,947
1900.....	47,292	375,180	59,869	1,726,631	968,732
1905.....	66,865	389,720	54,839	1,868,795	1,018,799
1910.....	67,668	432,961	55,670	1,874,363	926,753
1912.....	78,585	533,798	55,855	2,561,798	1,125,685
1916.....	86,806	476,457	70,134	2,348,695	1,017,529
1917.....	81,214	468,941	66,303	2,199,326	1,077,783

GREAT RAILWAY OF VENEZUELA.

1894.....	178,225	1,138,645	14,932	1,879,494	2,702,303
1895.....	152,217	1,046,777	23,118	2,071,262	2,035,925
1900.....	126,026	757,642	24,951	1,872,975	1,537,669
1905.....	133,407	725,002	26,351	1,916,024	1,460,965
1910.....	139,225	749,410	33,528	2,168,700	1,388,455
1912.....	194,840	1,090,086	42,562	2,752,627	1,552,808
1916.....	182,601	1,006,622	37,916	2,553,348	1,575,385
1917.....	189,812	1,081,362	35,848	2,763,822	1,660,022

CENTRAL RAILWAY OF VENEZUELA.

1887.....	30,072	78,430	1,129	86,500	126,630
1890.....	90,003	135,665	3,875	180,580	245,286
1895.....	81,643	119,836	2,970	144,825	159,787
1900.....	57,356	88,303	1,300	102,925	86,513
1905.....	61,824	66,200	7,245	111,507	116,204
1910.....	160,742	128,562	17,159	282,714	260,571
1912.....	215,367	184,155	26,142	636,207	430,448
1916.....	268,394	237,271	25,660	884,047	577,586
1917.....	307,849	269,961	31,196	1,240,419	787,196

TRANSPORTATION.

845

PUERTO CABELLO & VALENCIA RAILWAY.

Years.	Number of passengers.	Product of passenger traffic.	Freight transported.	Total receipts.	Total expenses.
		<i>Bolivars.</i>	<i>Metric tons.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1888.....	62,299	205,340	15,181	921,261	529,335
1890.....	49,653	242,802	27,175	1,401,813	721,552
1895.....	43,346	245,652	27,018	1,491,808	763,702
1900.....	20,278	126,883	16,890	941,786	644,031
1905.....	17,037	113,928	14,570	929,532	684,810
1910.....	21,129	129,873	27,354	852,718	591,619
1912.....	28,042	170,400	31,625	1,050,979	559,581
1916.....	28,885	156,099	36,819	1,008,672	629,151
1917.....	39,743	221,199	54,063	1,262,697	717,326

BOLIVAR RAILWAY.

1895.....	9,361	51,536	14,858	1,091,531	906,158
1900.....	5,065	46,945	14,225	706,696	608,907
1905.....	5,252	47,249	7,963	808,495	1,180,402
1910.....	10,182	63,208	22,855	1,734,735	1,229,021
1912.....	19,933	119,255	35,138	2,375,123	1,373,468
1916.....	18,264	116,147	56,503	2,495,451	1,734,785
1917.....	25,310	130,123	76,982	3,371,319	1,912,408

Below is a synopsis of the 1918 and 1919 statistics for the 12 active lines:

[Bolivar=\$0.193; metric ton=2,205 pounds.]

Years.	Number of passengers.	Product of passenger traffic.	Freight.	Total receipts.	Total expenses.
		<i>Bolivars.</i>	<i>Metric tons.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
La Guaira & Caracas Railway:					
1918.....	80,660	435,944	51,545	1,782,375	965,232
1919.....	73,305	508,286	76,334	2,483,009	1,205,046
Great Railway of Venezuela:					
1918.....	176,088	928,970	48,417	3,004,608	1,654,900
1919.....	211,442	1,145,018	60,495	3,779,174	1,927,125
Carenero Railway:					
1918.....	18,772	40,584	7,467	317,201	316,997
1919.....	20,037	42,445	6,922	314,139	312,677
Puerto Cabello & Valencia Railway:					
1918.....	41,288	178,814	53,701	1,210,660	718,168
1919.....	53,990	229,999	55,120	1,472,061	823,706
Santa Barbara & El Vigia Railway:					
1918.....	10,700	27,955	14,397	451,315	266,780
1919.....	11,940	32,676	17,821	662,479	333,337
Bolivar Railway:					
1918.....	24,533	126,337	64,743	2,576,708	1,848,323
1919.....	24,408	168,357	38,820	2,887,159	2,068,767
Tachira Railway:					
1918.....	17,325	68,530	16,294	1,242,735	559,175
1919.....	19,070	87,768	19,561	1,571,381	625,638
Central Railway of Venezuela:					
1918.....	325,452	295,549	25,888	1,329,487	960,765
1919.....	326,945	319,903	22,790	1,207,021	1,043,553
La Ceiba Railway:					
1918.....	9,112	52,601	16,981	980,826	562,529
1919.....	9,649	73,445	21,706	1,418,069	647,588
Guanta-Naricual Railway:					
1918.....	5,483	9,963	24,420	175,450	172,224
1919.....	13,553	21,678	28,862	281,704	271,243
Coro & La Vela Railway:					
1918.....	6,763	7,011	8,269	44,813	43,981
1919.....	6,681	7,009	10,528	63,278	64,797
Malquetia-Macuto Coast Line:					
1918.....	302,134	173,183	1,945	202,175	110,813
1919.....	430,668	239,108	2,562	270,628	146,302

For detailed accounts of the history, lines, right of way, and class of service and traffic of all railways of Venezuela the reader is re-

ferred to the chapters on the several commercial districts, beginning on page 118.

When analyzing the above figures it should be borne in mind that the year 1919 was one of extraordinary prosperity and movement in all lines of industry and commerce, and it is not probable that the tonnage movement will equal that of 1919 for some time to come, in view of the general depression obtaining in the world's markets for Venezuela's export products and the general financial and commercial situation at the end of 1920.

NATIONAL SYSTEM OF HIGHWAYS.

DEVELOPMENT OF ROAD-BUILDING PROGRAM.

From 1908 to the present time the repair and construction of old and new cart roads may be said to have constituted the chief policy of the administration of Gen. Gomez and the principal work performed by the Ministry of Public Works. Approximately 60 per cent of the total appropriation of the Ministry of Public Works is destined for road work each year. The entire commercial districts of Caracas, Valencia, Puerto Cabello, and Barquisimeto are now connected by cart roads which make these centers accessible by automobile. The two-wheeled mule carts of the country compete with the existing railways over these roads, which constitute one of the most important elements in the development of the industrial and commercial life of the Republic.

During these last 12 years a total of 2,662 kilometers (1 kilometer = 0.62 mile) of principal highways have either been reconstructed or newly constructed; whereas at the beginning of the Gomez administration there were only a few roads, in a bad state of repair and practically impassable for wheeled traffic. In addition to the above total, 1,775 kilometers of new road have been surveyed and are actually under construction by divisions, the program including the work being done by the National Government and by the governments of the States under the existing plan whereby the National Government constructs the main highways and the States the connecting roads from the State capitals and principal centers of population to these highways.

In conjunction with the national program of road building is that for the repair and construction of the pack trails which act as feeders for the main highways and make even the outlying and more inaccessible parts of the States available for more intensive development. Prior to this work by the Government the annual rainy season was a period of practical paralysis of movement, freights increased enormously in cost on account of the difficulties of transit without good roads and trails, and the development of the outlying districts was hindered. Freights are now stabilized all the year round, resulting in a great economy for the country.

Taking the territorial area, population, and national wealth as a basis of comparison, one can find in no other country of Latin America to-day any such development of roads and highways as in Venezuela. In this respect Venezuela is far ahead of Mexico, a richer and much more populous country.

GREAT WESTERN HIGHWAY.

The Great Western Highway is the most ambitious feature of the entire road-building program, as it will connect Caracas with the western frontier at the Colombian border near San Cristobal, crossing eight States of the Republic, and, when completed, it will have a total length of 872 kilometers (1 kilometer=0.62 mile). The political divisions crossed include the Federal District and the States of Miranda, Aragua, Carabobo, Cojedes, Portuguesa, Zamora, and Tachira. The principal towns and cities placed in connection by this route will be as follows: Caracas, La Victoria, Maracay, Valencia, San Carlos, Guanare, Barinas, Ciudad Bolivia, San Antonio de Caparo, San Cristobal, and San Antonio del Tachira. The route is from the capital (Caracas) through the broken hills of the valley between the two divisions of the Coast Range to Lake Valencia and the city of that name, then southwest to San Carlos, and so on across the great plains following the low ground at the foot of the Western Andes to the watershed at the extreme southern end of the Venezuelan Andes, where the pass of the River Uribante affords an easy grade across the watershed to the western divide, San Cristobal, and the Colombian border. Regions long practically abandoned by development, such as those of Guanare and Barinas, will be placed within two days' automobile journey of Caracas, and the rich agricultural and pastoral regions of these centers will be opened up for modern development.

Following are the sections of this highway that have been repaired or newly constructed:

	Kilometers.	Miles.
Caracas to Valencia: Under reconstruction; macadam as far as		
Los Teques, 18 miles-----	160	99.4
Valencia to San Carlos: Reconstructed-----	80	49.7
San Carlos to Guanare: Repaired from Guanare to the ford of		
the River Portuguesa-----	11	6.8
Guanare to Barinas:		
Repaired from ford of River Guanare to Bocono-----	35	21.7
Repaired from Guanare to River Guanare-----	6	3.7
Barinas to San Antonio de Caparo:		
Constructed from Barinas to Ciudad Bolivia-----	60	37.2
Construction begun between San Antonio and Santa		
Barbara-----	107	66.4
From San Antonio de Caparo, main road west: Construction		
started-----	16	9.9
Rio Frío to San Cristobal: Under construction-----	31	19.2
	506	314.0

Automobile and freight cart service is now (1920) maintained from Caracas as far as San Carlos, and the work of connecting up the remaining sections is being rapidly pushed by the Government engineers at the present time.

GREAT EASTERN HIGHWAY.

The Great Eastern Highway will have a total length of 1,011 kilometers (1 kilometer=0.62 mile) when completed and will form the overland highway between the capital (Caracas), Ciudad Bolivar on the Orinoco, and Tumeremo, in the heart of the balata country and south of the famous gold fields of El Callao in Venezuelan Guiana.

This road will pass through four States—Aragua, Guarico, Anzoategui, and Bolivar—the route lying between the towns of Cagua, Villa Cura, San Juan de los Morros, Ortiz, El Sombrero, Barbacoas, Chaguaramas, Valle de la Pascua, Tucupido, Zaraza, Aragua de Barcelona, Cantaura, Soledad, and Ciudad Bolivar on the Orinoco, whence the route will cross the River Caroni at the fords of Guri and connect with the present wagon road from San Felix to Turmeremo, traversing Venezuelan Guiana.

These two main highways will traverse the entire country inland from east to west and will afford connection with the seaboard over the roads already constructed or surveyed, as follows: Carretera Central de Tachira, now under active construction; Central de Trujillo, also under construction; Puerto Cabello to Valencia and San Felipe; Maracay to Ocumare de la Costa; La Guaira to Caracas; Caracas to Guatire; the new resurveyed road from Barcelona to Soledad, which crosses the eastern Coast Range to the llanos and which is now under construction by the State government; the projected prolongation of the Great Eastern Highway from Sombrero to Calabozo and thence on south across the plains to San Fernando de Apure; that of Cumana to Cumanacoa—thus connecting the Caribbean seaboard with the interior river waterway system of transportation and the eastern section with the western frontier regions.

LISTS OF ROADS.

The following list shows the highways of the country (some of which form a part of either the Great Western or the Great Eastern Highway) that are being repaired after old construction, reconstructed, newly constructed, or surveyed:

	Kilometers.	Miles.
Central Highway of Tachira:		
From La Uraca, at end of Tachira Railway, to San Cristobal: Under construction	86	53.40
Branch road to Urena on Colombian border, San Antonio and Rubio: Constructed 1920	52	32.30
Caracas to Guatire: Paved in part with macadam	50	31.06
La Guaira-Caracas: Reconstructed and partly paved with macadam	36	22.36
Southern Highway, Caracas to Charallave: An old road recently repaired and reconstructed in part	52	32.31
Valencia to Puerto Cabello: Newly constructed	54	33.55
Puerto Cabello to San Felipe: Under construction at present time	91	56.54
Central Highway of Trujillo: Under construction (to connect Trujillo with end of La Ceiba Railway at Motatan, via Valera)	32	19.88
Maracay to Ocumare de la Costa: Newly constructed road	59	36.66
Llanos Highway, Turmero to Calabozo section: Under construction (completed from Cagua, on German Railway, to San Juan de los Morros)	178	110.60
Barquisimeto to Trujillo: Surveyed (under construction from Barquisimeto to Carora)	310	192.62
Barquisimeto to Yaritagua: Under construction (to connect with Valencia via Nirgua and Montalban)	30	18.64
Barquisimeto to Tocuyo: Under repair	75	46.60
Barquisimeto to Duaca, on Bolivar Railway: Projected to port of Tucacas, paralleling railway	45	27.96
Barquisimeto to Guanare: Under repair between Quilbor and Sanare	17	10.56
Coro to Cumarebo: Under repair, State of Falcon	35	21.74
Maracaibo to Perija, State of Zulia: Under survey and location at present time	85	52.81

	Kilometers.	Miles.
Charallave to San Casimiro: Under repair (continuation of Southern Highway to Ocumare).....	38	23.61
Valencia to Guigue: Under construction.....	19	11.80
Maracay to Guigue, south of Lake Valencia route.....	30	18.64
Valencia to Nirgua: Under repair.....	50	31.06
La Guaira to Macuto Coast Line: Under repair at present time.....	104	64.62
Macuto to La Sabana Coast Route: Repair work as far as kilometer 10 from Macuto.....	5	3.10
Merida to El Vigia at end of Santa Barbara & El Vigia Railway: Completed in 1920 as far as Lagunillas.....	10	6.20
Timotes to Valera, to connect with La Ceiba Railway: Under construction; to date.....	30	18.64
San Felipe to Nirgua Highway section, to connect with road from Valencia to Barquisimeto: Under construction; to date.....	4	2.48
Cagua to Santa Cruz: Under repair.....	27	16.77
Barcelona to San Mateo, State of Anzoategui: Relocation and repair.....	5	3.10
Cumana to Cumanacoa: Under construction; to date.....	55	34.17
Carupano to Tunapuy: Reconstructed for.....	22	13.67
Carupano to Cariaco: Under construction; to date.....	10	6.21
Rio Caribe to Yaguarapato: Under construction.....	40	24.85
Carupano to Rio Caribe: Under construction; to date.....	12	7.45
Carupano to El Pilar: Under construction; to date.....	6	3.72
Maturin to Cano Frances: Under construction; to date.....	5	3.10
La Vela de Coro, State of Falcon, to lake port of Altagracia, in State of Zulia: Under survey.....	13	8.07
San Carlos to Manrique, State of Cojedes, to connect with Great Western Highway: Reconstruction.....	220	136.70
Maracaibo to Bellavista, suburban road: Construction.....	20	12.42
Tinaco to Pao, to connect with Great Western Highway: Under repair.....	5	3.10
Asuncion to Porlamar, island of Margarita: Construction.....	40	24.85
Asuncion to Port Fermin, island of Margarita: Reconstruction.....	9	5.59
Asuncion to Juan Griego Bay, island of Margarita: Repairs.....	12	7.45
Juan Griego Bay to Punta Piedras, island of Margarita.....	14	8.69
Porlamar to connect with above road, island of Margarita.....	32	19.88
Porlamar to Pampatar, island of Margarita: Repairs.....	16	9.94
Asuncion to Pampatar, island of Margarita: Repairs.....	8	4.97
	8	4.97

The above total length of highways that are being repaired, are under construction, or are under process of survey at the present time (end of 1920), added to the totals given for the sections of the Great Western Highway, makes 2,662 kilometers, or 1,654 miles.

To this total must be added the lengths of the main highways which are already surveyed and mapped but on which construction has not yet been undertaken (with the exception of important bridge work at various points), as follows:

	Kilometers.	Miles.
Great Western Highway of Venezuela; remainder of route not included in the above.....	366	227.42
Great Eastern Highway of Venezuela, from its connection with Great Western Highway between Turmero and San Mateo.....	1,011	628.20
Central Highway of Tachira; branch road to Urena, San Antonio and Rubio, not included in above.....	25	15.53
Cumana to Cumanacoa; remainder of construction.....	33	20.50
Carupano to Tunapuy; remainder of construction.....	20	12.42
Maturin to Cano San Juan, navigable channel to Gulf of Paria: Under survey at present time.....	63	39.14
Merida to El Vigia Highway, to end of railway: Under survey from Lagunillas to El Vigia.....	55	34.17

	Kilometers.	Miles.
Tovar to Santa Cruz, State of Merida: Survey.....	17	10.56
Timotes to connect with Barquisimeto Highway to Trujillo; first section in Trujillo.....	10	6.21
Altagracia de Orituco to San Fernando de Macaira, State or Guarico.....	30	18.64
Sabaneta to Puerto Nutrias, State of Zamora.....	145	90.09
Total.....	1,775	1,103.00

HIGHWAY LEGISLATION.

The executive decree of June 24, 1910, assigned at least one-half of the revenue of the Ministry of Public Works to road construction and survey work. The Great Eastern Highway was created by another executive decree of August 11, 1916; and the decree of January 24, 1917, made this road a part of the highway from the river port of San Felipe to Tumeremo in the Guiana region of Venezuela, with a donation of Federal aid to the State of Bolivar to defray construction expenses. As required, the Central Government assists the States in road building by the assignment of funds from the general fund of the Ministry of Public Works, and engineers in the employ of the department are delegated to serve on the work of the States' building program wherever necessary.

FUNDS ALLOTTED TO ROAD CONSTRUCTION.

In 1910 there were only about 80 miles of road in Venezuela practicable for wheeled traffic. From that year up to the end of the fiscal year 1916 (June 30), 390 miles of road had been newly constructed and a total of 885 miles of old road repaired and put into condition for traffic use, making a total of 1,275 miles at the close of that year. From 1910 to the end of 1916 about \$3,860,000 was spent by the Government in highway construction and repair work, a sum considerably in excess of the entire amounts expended upon the roads of the country during the preceding 35 years. The following table shows the amount invested by the Government of Venezuela in public works since 1915, the amount allotted to road work, and its percentage:

Years.	Total investment in public works (round numbers).	Total investment in roads and highways (round numbers).	Percentage invested in road work.
	<i>Bolivars.</i>	<i>Bolivars.</i>	
1915.....	4,400,000	2,350,000	53
1916.....	6,250,000	4,150,000	66
1917.....	8,700,000	4,800,000	55
1918.....	5,800,000	3,650,000	63
1919.....	10,500,000	6,300,000	60
Total or average.....	35,650,000	21,250,000	60

ROAD-BUILDING SPECIFICATIONS—METHOD OF CONSTRUCTION—MATERIALS USED.

The territory crossed by the various roads and highways of Venezuela is so varied in character, from rough mountainous country to level swampy plains, and the need for roads has been so great, that

the road-building program has been carried out in a rapid manner, the expense always being consistent with the national policy of governmental economy in administration and expenditure, and the character of the road constructed being in keeping with the immediate needs of the particular district or region to be traversed and its economic development. The Great Western Highway is, however, somewhat of an exception to this general rule, and, like the Maracay to Ocumare de la Costa road, may be said to have had its conception in strategic needs at the time.

The word "highway," when applied to roads in Venezuela, is misleading to the average American mind, as the highways are really narrow cart roads, full of sharp curves and heavy grades in the mountainous part of the country and not practicable for heavy motor-truck traffic—the general plan being, as stated above, to provide a road of a temporary sort, then later widen and improve it as the needs of the traffic and development dictate. Thus the road from Caracas to La Guaira is now being repaved with 6 inches of stone (macadam), as are also the roads from Caracas to Guatire and from Caracas to Valencia, the paving having reached as far as Los Teques, 30 kilometers from Caracas (1 kilometer=0.62 mile), by the end of 1920. When reconstructed the existing roads are widened in various dangerous places, but, as a rule, the usual width is not increased. So far as automobile traffic is concerned, all the roads may be said to be much too narrow, with too sharp turns and heavy grades in places of difficult ground. This is especially true of the La Guaira and Caracas Highway, the Puerto Cabello and Valencia Highway, and the Caracas-Valencia Highway, which are the most traveled roads of the country at present. The roads may be said to be admirable cart roads for the common two-wheeled, easily handled mule cart of the country, but not automobile highways.

Speaking generally, road-building specifications may be said to be as follows: Streets and suburban highways within city limits are ordinarily required to have a width of 6 meters (1 meter=3.28 feet), including pavement, sidewalk, and drains. The clear width of bridges is 4.27 meters. The minimum curve radius is ordinarily 20 meters, but is often reduced to 15 meters to avoid excessive expense in removing earth and making cuts. The maximum grade is 5 per cent, but, to overcome serious obstacles or for reasons of economy, the maximum grade is often increased to 7 and 8 per cent over short sections of road. The bridges must have sufficient resistance to support an overload of 480 kilos per square meter (98.3 pounds per square foot) and the weight of a 15-ton roller. The abutments of bridges are usually of concrete. Macadamizing is done by the following method, near-at-hand materials being always used: A 6-inch layer of country rock, 2, 3, 4, 5, and 6 inches in size (diameter) is laid by hand on the dirt surface after this has been rolled and traveled for a certain length of time previously. This layer averages about 6 inches in thickness. On top of this is placed, after rolling again, another layer of hand-broken stone sized to about 1 inch. This is rolled into place, and a "cap" of sand and small washed gravel taken from some near-by stream bed is put on top and rolled. Repair of "chuck holes" and washings is made by merely filling

with this sand and gravel, which soon cuts out. One repair man is allotted to sections of from 2 to 5 kilometers of new road (1 kilometer=0.62 mile).

Highways outside of city limits have a maximum width of surface of 4.5 meters and a "crown" of one-thirtieth to one-fiftieth in this width. Ditching is from 0.60 to 0.80 meter in width at the top, 0.30 to 0.40 on the bottom, and the depth is usually from 0.40 to 0.50 meter.

Highway traffic in Venezuela is regulated by an Executive decree of July 1, 1915, published in the Official Gazette of July 2, 1915, No. 12549.

In laying out roads the engineers have always followed the contour of the mountainsides on their grade allowance. Looking at a road from the distance of an opposite mountainside, one sees a straight line inclined to the percentage of grade. Seen from above, a road is a series of more or less sharp curves, twisting with the formation of the hillside. No projections are cut away, and bridges are used only over the larger streams. Drains are usually made of the flat, tile-like stone found in abundance in most parts of the country, although concrete is used for the larger ones, especially on the Caracas and La Guaira Highway, on which a great deal of new work is being done.

Sides of cuts are held in place very often by a sort of dry masonry wall "tied" into the bank. In soft ground on steep hillsides, where there is very often a great deal of spring seepage which keeps the ground in a wet and shifting condition, a very clever system for holding surface has been worked out. The road is cut down to the grade and width by bar and shovel and then crossed with lines of cobblestones carefully placed in position by hand as for a cobble pavement, these lines (like the ties of a railway) being from 6 to 8 inches thick, from 1 foot to 2 feet wide, and spaced from 3 to 4 feet apart, according to the nature of the ground and the amount of water to be carried off in drainage. Dirt is filled in between these crossings of cobble, and then the surface is laid on. The result is that the water from the seepages, collecting in the upper side ditch, finds its way across the road under the surface through the cobble sections which also form a support, in the soft ground, for the surfacing of the road. The Maracay and Ocumare de la Costa road has a number of such sections. This road, 60 kilometers in length, cost \$455,682 to construct, or an average of \$12,223 per mile. Mountain sections cost, where rock work is encountered, an average of \$24,734 per mile. The cost of 1 square meter (10.76 square feet) of macadam, as described, is 4.60 bolivars (\$0.89), or \$0.75 per square yard.

USE OF ROAD-MAKING MACHINERY.

On account of the unskilled character of the labor available, the broken nature of the ground covered (with its varying conditions of soil, rock, topography, etc.), and the sectional nature of the work, as well as the lack of general knowledge of the advantages of modern road-making machinery, little machinery is used in Venezuela for highway construction with the exception of steam rollers, of which the Department of Public Works possesses an adequate number for

the work in the Caracas district and for the Great Western Highway now under way.

As no heavy cuts are attempted except in extreme cases in the mountains, little dynamite is used for road work, but such work as is done with explosives is carefully handled and shots are detonated with the hand battery of plunger type. There are numerous places on the new roads where a few heavy charges of black powder, detonated with dynamite, would do good work in cutting down sharp turns and filling the intervening depression, but the engineers seem to prefer a series of curves on grade.

There are long stretches of the road west of Valencia now under construction at different points (according to political divisions of the States through which the road passes) which are fairly level, crossing the llanos of San Carlos and beyond, where ditching machines and graders could be used to advantage in the soft soil. Rock for surfacing, now broken by hand and hammer, could be much more advantageously handled with small portable rock crushers operated by gasoline engines. Plows for grading are not used, the work being done with shovels and wheelbarrows; small two-wheeled one-mule carts are also used.

The great trouble with the use of heavy machinery for road building in Venezuela is the lack of draft animals capable of hauling heavy equipment. The native mules are all very small—not over 600 pounds in weight—and it seems impossible for the men to drive them together “in team” (that is, to make them pull together); the manner in vogue is not driving but is more like herding the animals along. Small gas tractors of the caterpillar type would have to be used for traction for ditching machines and graders, as well as for plowing. The present roads are too narrow in width and the turns too sharp to permit the use of a “string” of four-wheeled wagons of the “dump” type, for grading and filling, drawn by tractors.

Another factor preventing the use of modern complicated machinery is the sectional nature of the work, which is carried on from various points at one time, the men being drawn from outlying districts, as has been explained, and the road not being completed between sections under construction. There is also the important factor of the varying nature of the ground to be worked; a machine might do very well in one place, while a few kilometers away it might have to be readjusted, or might be found entirely unfit for the nature of the soil.

The Department of Public Works is in charge of an able and energetic engineer, Dr. Luis Velez, Minister of Public Works, who is interested in all modern construction devices and new machinery equipment. American manufacturers of road-building machinery would do well to get in touch with his office, sending catalogues, etc., and making their offers include the sending to the country of a practical highway engineer and road-machine man to cooperate with the department in the proper use and adaptation of the machines. All literature should be in Spanish, with specifications, so far as possible, in the metric system.

The roads and highways of each commercial district are described in the reports beginning on page 118.

VENEZUELA AS AN AUTOMOBILE MARKET.

The Government encourages the importation of motor vehicles by giving them a very low tariff classification. Both trucks and cars pay an import duty equal to \$0.68 per 100 pounds, gross weight.¹ In June, 1918, it was estimated that there were 1,600 light passenger cars in the country in active service, and about 30 motor trucks. The latter are used for city trucking, since for long-distance hauling motor trucks can not compete with the two-wheeled cart of the country, on account of the high cost of gasoline (never less than \$0.60 per gallon), the high wages demanded by the truck drivers, the very long and steep grades with sharp curves encountered on most of the roads in and about Caracas, the lack of sufficient surface on the roads to withstand heavy traffic of this kind, the high cost of tires, replacement parts, and repair work, and the apparent inability of the native drivers to appreciate the value of time or the necessity of keeping the truck moving.

As an example of the difficulties to be encountered in motor-truck transportation in Venezuela, the road from Caracas to La Guaira may be cited. This road is 23 miles long and climbs from sea level to an elevation of 3,293 feet in a distance of 9.32 miles.

The present road mileage of the country practicable for automobiles may be said to be about 1,600. Associated with this road construction (and constituting, to some extent, both cause and effect) have been the increasing imports of automobiles into Venezuela from the United States and Europe. The shipments of American cars into the country have averaged 315 per year for the last eight years, the total number of cars exported to Venezuela by the United States during this period being 2,565.

SHIPMENTS OF MOTOR VEHICLES FROM UNITED STATES TO VENEZUELA.

With the exception of the calendar year 1918, when war restrictions lowered exports, the shipments of motor vehicles from the United States to Venezuela have gained steadily since 1913, as is shown by the following table of exports of commercial and passenger cars, parts, tires, and motor cycles; this statement does not include the shipments from the close of the fiscal year 1918 to the beginning of the calendar year 1919, when the motor trucks numbered 2 and the passenger cars 39:

¹ As a result of the efforts of American diplomatic representatives, a ministerial resolution published in the *Diario Oficial* of Venezuela Sept. 17, 1921, established a special schedule in the Venezuelan customs law for automobile trailers ("carro de compana adoptable a automovil") under the next to the lowest class, which is dutiable at the rate of 0.10 bolivar (less than 2 cents United States currency) per kilo (2.2046 pounds). The accessories included with trailers, which are much in demand in Venezuela for the use of employees of petroleum development companies, are to be admitted at the same rate, namely: 1 canvas tent with supports, 2 mattresses, 2 quilts, 4 pillows, 1 stove, 1 suspension draft board, 1 electric-light socket and its extension cord, and 1 folding table. These accessories were formerly dutiable at rates ranging from not less than fourth class, 15 cents duty (United States currency) per kilo, to sixth class, which pays 50 cents duty (United States currency) per kilo.

Periods.	Commercial cars.		Passenger cars.		Parts.	Tires.	Motor cycles.	Total value.
	Num-ber.	Value.	Num-ber.	Value.				
Fiscal years:								
1913.....	23	\$34,291	104	\$109,499	\$20,703	\$10,708	\$3,466	\$178,082
1914.....	12	28,228	126	102,073	36,286	20,439	4,725	191,751
1915.....	3	7,164	227	143,086	28,750	32,635	912	212,547
1916.....	6	13,029	518	314,156	40,783	71,849	456	440,273
1917.....	14	28,502	542	327,507	87,768	128,966	4,746	577,489
1918.....	16	12,410	160	97,485	57,873	166,612	573	281,953
Calendar years:								
1919.....	41	24,579	293	300,888	110,496	226,953	1,885	664,801
1920.....	156	107,956	869	812,743	257,934	285,497	2,384	1,466,514

MARKET FLUCTUATIONS.

The automobile market in Venezuela (the center of which is in the capital, Caracas, with the next most important district that of Valencia and Puerto Cabello) at the end of 1920 was at a point of saturation, following heavy imports of light cars during the two preceding years. With greatly decreased market prices for the country's export products, principally coffee and cacao, upon which the general economic condition of the country rests, the ready demand for cars that prevailed during 1919 and the first part of 1920 had almost ceased and the country was facing a period of retrenchment and readjustment following a period of speculation, over-extension of credit, etc. It remains to be seen just how far the increased provision of new roads penetrating into a territory as yet undeveloped will counterbalance present economic conditions. In view of the scant population and general lack of labor in the rural districts, and the present unfavorable market condition, it is very doubtful whether the quantities and values of the 1919 and 1920 imports of automobiles will be repeated for several years to come.

AVERAGE PRICES OF CARS AND TRUCKS IMPORTED.

The average price of passenger cars exported from the United States to Venezuela has varied considerably; in 1913 it was \$1,052, in 1917 it fell to \$604, in 1919 it rose to \$1,026, and in 1920 it dropped slightly, to \$935. Motor trucks have also changed in price, the average being \$1,490 in 1913, \$2,035 in 1917, and only \$599 in 1919 and \$692 in 1920. This change in the average cost of cars has been due to the increasing purchasing power of the middle class of the people and to the more general use of the automobile for country transport, combined with the better sales agencies in the trade, the demand being for the cheaper grade of light car, which is much better suited to the narrow, unpaved highways of the country than are heavy cars.

TOTAL IMPORTS OF AUTOMOBILES.

The official statistics of Venezuela show that in the last pre-war year the United States sent two-thirds of the total number of cars imported into Venezuela, while the remaining third was contributed by European countries, among which France held the leading place.

356 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

After 1914, however, the only imports other than those received from the United States were transshipments from Trinidad and neighboring parts of Colombia. The following table shows the total imports of motor vehicles in 1913, 1915, and 1919:

[Kilo=2.2046 pounds; bolivar=\$.193.]

Countries of origin.	1913		1915		1919	
	Kilos.	Bolivars.	Kilos.	Bolivars.	Kilos.	Bolivars.
United States.....	226,295	736,219	544,747	1,245,323	517,478	1,359,671
France.....	34,677	147,677	1,570	6,000		
United Kingdom.....	24,644	93,782				
Netherlands.....	25,609	87,262				
Germany.....	8,690	18,200				
Italy.....	525	1,900				
Colombia.....			2,305	3,500	2,490	15,600
Curaçao.....					1,200	4,000
Trinidad.....			3,908	14,550	1,713	6,742
Total.....	317,240	1,085,040	552,530	1,269,373	522,881	1,386,013

CUSTOMS DUTIES.

An American consul warns exporters not to include extra wheels or other spare parts with shipments of automobiles to Venezuela, as such extras would cause fines by the customs. The import duty on motor cars and trucks amounts to \$0.68 per 100 pounds of gross weight, on motor cycles to \$3.43 per 100 pounds of gross weight, and on automobile parts and tires to \$10.28 per 100 pounds of gross weight.

AGENCIES.

The capital, Caracas, is considered the best location for a general agency; the capital is the center of the commercial and financial life of the country and of the automobile business, as more than half of the cars used in Venezuela are found here or in this district. Sub-agencies might be established with good results at Maracaibo (to take care of the entire Maracaibo and Andean region of Venezuela and the Cucuta region of Colombia), at Valencia, Puerto Cabello, and Barquisimeto, though this latter point could also be taken care of from Puerto Cabello.

EUROPEAN COMPETITION.

The only active competition to be expected by American automobile manufacturers in the Venezuelan market is that from Italy and Germany. Toward the close of 1920 the Fiat, of Italy, placed an agency in Caracas with a local concern and was preparing to ship both light cars and a small gas farm tractor to compete with the well-known American makes of both of these machines. One sample car had reached Caracas by November, and it was seen to be a very attractive small five-passenger car which would retail at a price to compete with American cars of the same size and type. A well-known German automobile company had also placed a small light car on the market in November, 1920, and additional shipments were promised in the near future. The low value of the German mark and Italian lira made purchase of those cars additionally attractive to Vene-

zuelan buyers in comparison with American cars, which were being adversely affected by the high premium on the dollar.

TAXES IMPOSED BY GOVERNMENT ON TRUCKS AND CARS.

The only taxes imposed by the Government of Venezuela on passenger cars is the import duty already mentioned. All passenger cars pay a monthly tax of 10 bolivars (\$1.93) to the municipality, and no other form of tax is paid unless the cars are used for hire or in the public service for fare or pay. Taxicabs pay at the rate of 20 bolivars (\$3.86) per month to the municipality, these cars being invariably five or seven passenger touring cars operating at "per-hour" rates. Commercial trucks pay a tax to the municipality of 40 bolivars (\$7.72) per month. A driver's license, which is paid only once (and then for drivers of public cars only), costs 10 bolivars (\$1.93).

Motor-vehicle dealers pay to the municipality the usual 600 bolivars (\$115.80) municipal agency tax, paid by all agents of foreign or domestic concerns. If the dealer is engaged in buying and selling cars, accessories, etc., the tax is assessed according to the annual volume of business done.

FOREIGN TRADE.

The first perceptible impulse to Venezuelan commerce became manifest after 1843, as a result of legislation organizing navigation and giving access to the harbors of the Republic. There was a gradual increase until 1860, the leading countries with which trade was maintained being the United States, Great Britain, France, and Germany, in the order named. A protective system was first instituted in 1896, the customhouse regulations prohibiting the importation of merchandise that tended to injure similar national products.

By this time the chief articles of importation were: From the United States, grain, hams, butter, kerosene, marble, wood, paper, caustic soda, potash, salted meats, chickens, biscuits, and machinery; from England, coal, cement, railway equipment, agricultural implements, iron in bulk, and cotton cloth; from Germany, writing materials, rice, cigars, beer, drugs, medicines, glass, cheese, sweets, perfumery, silks and cottons.

TOTALS FOR VENEZUELAN COMMERCE.

The tables below show total figures for the commerce of Venezuela :

TRADE BY FISCAL YEARS.

[1 bolivar = \$0.193.]

Years.	Imports.	Exports.	Years.	Imports.	Exports.
	<i>Bolivars.</i>	<i>Bolivars.</i>		<i>Bolivars.</i>	<i>Bolivars.</i>
1830-31.....	8,188,106	8,676,829	1895-96.....	60,688,077	111,455,143
1835-36.....	12,324,427	16,392,974	1900-1901.....	(a)	(a)
1840-41.....	29,599,693	24,639,341	1905-6.....	44,952,867	80,982,120
1845-46.....	21,744,956	28,481,189	1908-9.....	49,180,486	83,164,316
1850-51.....	22,366,922	25,299,681	1909-10.....	56,640,971	86,419,583
1854-55.....	24,971,218	27,467,452	1910-11.....	80,178,933	96,920,229
1859-60.....	27,230,578	34,514,595	1911-12.....	105,667,096	133,323,961
1864-65.....	38,135,266	33,398,354	1912-13.....	101,955,738	149,101,191
1870-71.....	(a)	(a)	1913-14.....	88,110,376	136,392,878
1875-76.....	75,216,867	80,561,133	1914-15.....	60,478,132	106,293,289
1881-82.....	58,219,129	70,306,449	1915-16.....	88,557,964	124,843,664
1885-86.....	62,453,378	82,304,289	1916-17.....	121,916,594	119,866,769
1890-91.....	66,674,481	118,952,508	1917-18.....	80,948,894	98,021,655

a Not available.

TRADE BY CALENDAR YEARS.

Years.	Imports.	Exports.	Years.	Imports.	Exports.
	<i>Bolivars.</i>	<i>Bolivars.</i>		<i>Bolivars.</i>	<i>Bolivars.</i>
1907.....	53,858,199	81,282,837	1914.....	72,473,913	111,505,355
1908.....	50,849,881	75,716,293	1915.....	69,793,970	121,266,459
1909.....	50,601,978	83,049,923	1916.....	106,914,089	117,652,854
1910.....	64,184,207	92,997,778	1917.....	114,964,886	120,024,361
1911.....	95,310,108	117,497,280	1918.....	77,244,950	102,659,154
1912.....	106,574,817	130,885,534	1919.....	177,243,766	258,668,750
1913.....	93,420,226	152,765,749	1920.....	308,751,964	168,038,854

EXPORT FIGURES.

In the following tables, detailed figures are given for the export trade of Venezuela:

EXPORTS BY PRINCIPAL ARTICLES.

[1 bolivar = \$0.193.]

Articles.	1909	1910	1911	1912
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Asphalt.....	727,306	948,876	1,386,174	1,573,002
Balata.....	6,650,643	11,366,830	12,639,481	9,156,784
Cacao.....	18,072,477	17,521,937	18,509,856	12,009,555
Coffee.....	39,736,537	41,713,926	59,020,617	78,702,479
Rubber.....	1,817,637	3,672,988	2,667,910	3,181,345
Goat hides.....	1,702,845	.....	2,657,492	4,073,015
Cowhides.....	5,104,513	.....	5,971,908	6,595,162
Cattle.....	1,180,367	1,004,353	1,081,046	1,067,291
Gold.....	1,623,578	1,604,552	3,644,692	6,131,345
Pearls.....	220,979	409,130	242,500	168,795
Feathers.....	1,156,458	.....	1,573,767	1,332,897

Articles.	1916	1917	1918	1919
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Asphalt.....	1,422,399	1,635,730	1,560,193	1,699,274
Balata.....	2,936,697	6,641,843	6,801,556	6,504,484
Cacao.....	22,403,490	24,290,826	19,798,054	39,086,570
Coffee.....	54,676,388	42,799,723	38,568,176	151,428,568
Rubber.....	726,737	1,276,875	145,764	835,641
Goat and deer skins.....	3,045,111	3,985,288	1,363,188	12,007,246
Cattle skins.....	8,706,454	9,172,581	3,249,060	14,211,644
Gold.....	7,664,343	4,655,086	2,348,915	2,498,629
Pearls.....	361,353	672,233	671,777	429,403
Feathers.....	529,644	476,889	736,307	1,591,371
Sugar:				
Raw.....	539,156	899,082	5,481,139	7,848,372
Refined.....	2,922,702	6,685,109		
Copper ore.....	1,805,065	2,856,650	386,852	.....
Frozen beef.....	1,671,080	2,210,304	2,545,935	3,059,355
Divi-divi.....	684,165	487,183	731,834	1,714,996
Tonka beans.....	82,569	599,340	29,425	448,761
Sole leather.....	903,943	536,100	369,164	1,145,456
Maize.....	21,674	2,859,176	3,987,698	2,213,363

EXPORTS BY COUNTRIES.

Countries of destination.	1909	1910	1911	1912
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Austria.....	578,868	415,314	1,469,584	1,405,429
Belgium.....	221,641	67,713	259,738	594,642
Colombia.....	4,890	301,933	494,350	374,336
Cuba.....	1,228,817	77,332	795,359	22,673
Denmark.....	.....	.....	6,778,934	6,611
France.....	26,603,362	29,149,456	31,928,350	35,824,741
Germany.....	5,550,736	11,987,339	22,120,214	20,428,542
Italy.....	301,888	149,285	738,367	1,101,042
Morocco.....	4,000	1,030	740	.....
Netherlands.....	5,578,650	13,420,167	5,510,857	3,690,936
Norway.....	.....	5,735	.....	.....
Panama.....	.....	3,830	.....	4,325
Portugal.....	.....	8,300	.....	.....
United Kingdom.....	8,615,874	10,979,049	10,714,031	8,478,038
United States.....	31,495,084	32,687,778	36,725,090	51,366,708

360 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

EXPORTS BY COUNTRIES—Continued.

Countries of destination.	1915	1916	1917	1918	1919
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Aruba.....			38,349	106,330	102,678
Barbados.....	17,446	16,255	331,770	450,192	443,351
Brazil.....		672,000			
Canary Islands.....	128,945	84,775	142,364	40,150	583,371
Colombia.....	235,984	342,264	600,399	612,203	614,965
Cuba.....	101,620	90,190	6,880	719,151	1,211,345
Curaçao.....	5,662,931	8,758,710	9,218,685	15,041,452	17,853,187
Denmark.....	1,128,216	140,560	25,894		
France.....	14,950,562	22,418,087	14,836,083	8,468,912	53,812,104
Grenada.....	1,950	7,271	24,734	26,069	3,155
Guadeloupe.....			45,890		79,300
Guiana, French.....	479,802	419,735	257,734	421,377	440,060
Italy.....	2,713,129	2,419,224	1,423,287	1,142,422	617,993
Martinique.....		262,116	491,664	1,178,677	1,528,684
Netherlands.....	10,912,146	3,296,850	805,270	2,397,634	13,216,192
Norway.....	232,865				
Panama.....	10,003	3,785		26,070	7,996
Porto Rico.....	11,050	14,300	323,091	327,166	123,560
Santa Lucia.....	1,403,071	298,374	1,492,290	2,971,202	757,550
Spain.....	5,469,617	10,429,477	12,075,956	8,873,769	16,815,279
Sweden.....	215,987				
Trinidad.....	5,929,385	4,074,352	6,037,621	9,892,129	12,306,157
United Kingdom.....	3,224,474	2,780,443	5,922,299	3,653,497	15,514,970
United States.....	68,238,925	61,117,983	66,282,822	46,055,107	122,372,096

EXPORTS BY CUSTOMHOUSES.

Customhouses.	1915	1916	1917	1918	1919
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Barrancas.....	333,234	806,470	625,971	3,370,843	1,151,579
Carupano.....	5,748,780	5,438,172	4,550,824	3,121,173	7,857,015
Ciudad Bolívar.....	16,107,767	11,987,709	12,792,635	11,732,735	17,477,003
Cristobal Colon.....	4,521,494	3,806,836	5,268,851	5,529,989	7,596,840
Guanta.....	363,326	396,570	453,031	447,368	1,301,050
La Guaira.....	31,124,251	29,855,278	31,014,469	28,003,024	55,094,918
La Vela.....	780,114	1,668,255	2,523,220	1,562,069	3,560,053
Maracaibo.....	35,573,803	35,849,011	32,265,603	28,696,481	77,332,398
Pampatar.....	221,225	213,641	362,349	770,950	600,759
Puerto Cabello.....	25,648,240	27,425,248	28,368,189	21,053,151	83,126,353
Puerto Sucre.....	827,481	201,061	170,608	239,055	2,608,983
Rio Caribe.....			53,705	214,940	637,383
Tucacas.....			1,582,920	916,450	420,879
San Antonio del Tachira.....	15,680	3,600			
Tucacas.....			1,582,920	916,450	420,879

Venezuelan official statistics always show a smaller total of exports to the United States than do export declarations made in American consulates. This is due to the fact that values of exportable products are usually understated and many articles declared in the customhouses for Curaçao and Trinidad are invoiced for the United States.

The most noticeable feature of recent statistics of exportation from Venezuela is that food products such as sugar, corn, corn meal, lard, coconut oil, cottonseed oil, and beans have all been exported in considerable quantity. Before the war all these articles were imported into Venezuela, whereas, under the stimulus of high prices and the encouragement given agriculture by the Government, production is sufficient not only for domestic requirements but also to supply neighboring countries. Whether the country will continue to produce such a surplus of foods under peace conditions and prices is doubtful, but this would not be so if it were possible

to reduce the level of internal transportation rates, which are often prohibitive for articles of low value in proportion to their weight.

IMPORT FIGURES.

Figures for Venezuela's imports are presented below:

IMPORTS BY COUNTRIES.

[1 bolivar = \$0.193.]

Countries of origin.	1909	1910	1911	1912
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Argentina.....				22,284
Austria.....	16,330	42,391	22,079	137,909
Belgium.....	217,887	214,340	658,287	738,692
China.....			2,336	8,007
Colombia.....		2,500	23,135	61,794
Costa Rica.....			500	
Cuba.....	10,469	8,457	13,266	
Denmark.....				6,176
Ecuador.....	2,500	2,500		
France.....	3,415,320	5,175,680	9,624,684	13,558,477
Germany.....	10,745,247	10,566,255	16,559,301	16,577,143
Italy.....	1,836,932	1,725,866	3,094,971	3,733,883
Netherlands.....	2,959,211	4,739,407	6,927,690	8,658,043
Panama.....	4,082			
Portugal.....	1,400	437		
Spain.....	2,729,662	2,785,132	3,452,593	4,800,235
United Kingdom.....	12,327,480	19,284,710	27,888,018	22,971,381
United States.....	16,326,452	19,636,527	27,045,443	35,402,833

Countries of origin.	1915	1916	1917	1918	1919
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Argentina.....	418,031				
Canary Islands.....		2,330	7,650	598	982
China.....		18,400			
Colombia.....	165,213	160,049	157,523	2,264,753	220,317
Cuba.....	38,240	340,365		20,058	24,945
Curaçao.....	40,808	138,727	905,058	707,433	900,442
Denmark.....		453,153	76,888	21,284	103,912
Ecuador.....		11,563	10,500		
France.....	3,391,347	5,144,099	4,921,095	1,654,460	4,016,422
Guiana, British.....	800				250
Italy.....	2,512,055	2,174,800	1,591,031	920,703	1,077,551
Netherlands.....	4,071,474	1,298,122	329,486	21,341	1,893,284
Panama.....	1,404	17,519	29,827	286,001	314,211
Porto Rico.....	1,652	21,550	81,628	620,363	306,855
Spain.....	3,376,205	5,996,236	6,565,082	2,239,941	5,393,049
Sweden.....	6,862				
Trinidad.....	823,981	873,126	727,608	328,098	4,007,974
United Kingdom.....	14,245,012	23,118,999	18,935,657	22,059,464	33,922,438
United States.....	41,156,573	67,143,664	80,631,122	45,944,621	124,824,196

IMPORTS BY CUSTOMHOUSES.

Customhouses.	1915	1916	1917	1918	1919
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
Barrancas.....	25,458	35,440	15,629		
Carupano.....	2,331,198	2,989,188	2,907,423	1,020,648	852,719
Ciudad Bolívar.....	4,667,080	5,287,064	5,690,357	3,741,328	12,589,409
Cristobal Colon.....	423,011	378,740	837,072	461,579	791,766
Guanta.....	87,679	8,080	200		
La Guaira.....	33,925,809	54,987,853	69,244,070	52,926,524	103,347,775
La Vela.....	363,030	703,856	552,905	305,688	702,742
Maracaibo.....	15,292,994	25,329,033	19,386,412	7,893,118	37,678,363
Pampatar.....	82,396	126,739	176,345	52,454	122,688
Puerto Cabello.....	11,839,757	16,592,002	15,536,309	10,681,161	20,849,450
Puerto Sucre.....	157,892	30,624	32,615	124,490	283,690
San Antonio del Tachira.....	596,661	463,353	581,834	37,960	25,164

362 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

Additional imports by parcel post (now segregated by the Venezuelan statistical office) amounted in 1919 to 8,786,340 bolivars (\$1,695,764), from the following sources:

	Bolivars.
United States.....	7, 602, 077
United Kingdom.....	503, 564
France.....	322, 079
Italy.....	216, 158
Spain.....	57, 587
Other countries.....	84, 875

Shipments by parcel post included drugs, medicines, jewelry, watches, hats, cotton goods, silks, rubber goods, etc.

The following table shows the value in United States currency of the principal articles imported into Venezuela, by countries of origin:

Articles and countries of origin.	1917	1918	Articles and countries of origin.	1917	1918
Agricultural implements.....	\$41, 058	\$132, 437	Butter—Continued.		
United States.....	32, 612	73, 800	Netherlands.....		\$728
United Kingdom.....	6, 130	58, 124	Spain.....	\$9, 810	
Spain.....	2, 316		United Kingdom.....	6, 820	
Arms and accessories.....	10, 030	257	Panama.....	5, 776	
United States.....	10, 016		Trinidad.....	124	10, 812
Automobiles.....	376, 895	208, 875	Buttons.....	47, 204	20, 820
United States.....	267, 776	208, 475	United States.....	11, 826	6, 739
United Kingdom (Trinidad).....	9, 119		United Kingdom.....	965	1, 275
Bags, empty.....	108, 469	151, 875	France.....	9, 245	3, 173
United States.....	32, 875	81, 192	Netherlands.....	52	
United Kingdom.....	52, 895	45, 852	Italy.....	13, 758	7, 574
France.....		10, 397	Spain.....	10, 312	576
Porto Rico.....	9, 939		Curacao.....	1, 046	
Colombia.....		7, 145	Panama.....		1, 483
Curacao.....		4, 218	Canned and preserved foods.	95, 113	73, 907
Spain.....		2, 404	United States.....	76, 692	69, 829
Trinidad.....		662	France.....	2, 782	302
Bagging.....	353, 919	142, 950	Italy.....	400	
United States.....	669		Spain.....	11, 236	3, 312
United Kingdom.....	351, 359	105, 993	Trinidad.....	3, 654	451
Colombia.....	694	800	United Kingdom.....	906	
Spain.....	1, 197		Carbonic acid gas.....	13, 552	9, 991
France.....		36, 572	United States.....	11, 903	8, 887
Beer.....	21, 339	3, 118	Trinidad.....	1, 609	377
United States.....	16, 339	446	France.....		727
United Kingdom.....	2, 069	1, 981	Cartridges.....	32, 038	
Denmark.....	1, 453		United States.....	31, 912	
Netherlands.....		677	Trinidad.....	126	
Belting.....	28, 555	29, 532	Cement.....	129, 670	112, 804
United States.....	25, 559	26, 319	United States.....	71, 283	90, 211
United Kingdom.....	2, 854	213	Trinidad.....	22, 430	
Beverages.....	206, 811	150, 021	Netherlands.....	9, 981	217
United States.....	22, 290	53, 874	Curacao.....		16, 168
United Kingdom.....	17, 332	30, 673	Barbados.....		2, 351
France.....	154, 550	58, 717	Cuba.....		2, 256
Netherlands.....	1, 791		Bonaire.....		976
Italy.....	1, 716	1, 146	Cheese.....	11, 701	5, 777
Trinidad.....	3, 544	2, 585	United States.....	7, 042	5, 577
Curacao.....	696	1, 279	Netherlands.....	2, 909	
Spain.....	4, 802	1, 647	Italy.....	95	
Biscuit.....	73, 675	14, 952	France.....	789	
United States.....	66, 472	7, 508	Coal.....	193, 664	90, 207
United Kingdom.....	1, 932		United States.....	52, 898	14, 492
Spain.....	1, 646	323	United Kingdom.....	30, 996	37, 199
France.....	723		Curacao.....	108, 576	38, 516
Trinidad.....	2, 889	7, 126	Confectionery.....	54, 309	24, 215
Books, printed.....	34, 336	24, 385	United States.....	33, 097	20, 696
United States.....	9, 063	4, 623	United Kingdom.....	3, 230	
Spain.....	14, 583	9, 981	France.....	11, 035	1, 848
France.....	9, 755	1, 608	Italy.....	4, 018	116
United Kingdom.....		6, 111	Spain.....	1, 793	1, 141
Panama.....		1, 154	Cordage.....	173, 229	121, 926
Italy.....		558	United States.....	154, 419	119, 870
Colombia.....		400	Italy.....	16, 777	144
Butter.....	73, 775	14, 411	Trinidad.....	1, 428	1, 365
United States.....	37, 768	2, 871	Cotton manufactures:		
Denmark.....	13, 387		Knit goods.....	422, 614	157, 669
			United States.....	74, 805	102, 008

Articles and countries of origin.	1917	1918	Articles and countries of origin.	1917	1918
Cotton manufactures—Con.			Engines, gas, and oil motors..	\$109,550	\$68,114
Knit goods—Continued.			United States.....	96,985	64,442
United Kingdom.....	\$3,436	\$414	United Kingdom.....	1,973	713
France.....	29,733	8,147	France.....	6,548	1,269
Netherlands.....	145	385	Trinidad.....	2,841	364
Spain.....	306,767	37,307	Curacao.....		1,230
Italy.....	7,832	6,579	Explosives.....	23,934	7,437
Panama.....		2,073	United States.....	23,934	7,437
Trinidad.....		483	Flour, wheat.....	1,155,809	584,502
Canvas and duck.....	162,879	45,901	United States.....	1,151,775	480,129
United States.....	129,544	45,901	Curacao.....	2,634	394
United Kingdom.....	22,171		Trinidad.....	1,400	5,916
Spain.....	10,083		Panama.....		73,746
Trinidad.....	1,081		Colombia.....		16,817
Embroidery.....	13,952	113,925	Spain.....		7,500
United States.....	77	11,127	Grain:		
United Kingdom.....	12,781	100,938	Rice.....	641,038	489,508
France.....	12,691	1,226	United States.....	635,881	487,575
Panama.....		1,226	Trinidad.....	5,357	1,933
Blankets.....	154,362	126,881	Barley, malted.....	76,289	8,403
United States.....	125,364	124,322	United States.....	75,758	7,564
Spain.....	22,336	612	Colombia.....		939
United Kingdom.....	3,171	928	Glass:		
France.....	3,010		Bottles.....	75,797	16,413
Handkerchiefs and tow-			United States.....	73,532	11,523
eling.			Trinidad.....	2,266	
United States.....	90,329	61,853	United Kingdom.....		4,743
United States.....	4,184	20,702	Manufactures, n. e. s.....	57,833	52,216
United Kingdom.....	68,526	25,415	United States.....	49,403	47,013
Spain.....	17,046	2,911	United Kingdom.....		974
Panama.....		2,363	France.....	6,180	2,120
Trinidad.....		462	Italy.....		1,194
Lace and trimmings.....	103,893	947	Plate and flat.....	13,054	14,805
United States.....	1,260	472	United States.....	13,047	14,459
United Kingdom.....	97,227	475	Gold coin.....	3,560,563	1,061,921
France.....	4,141		United States.....	3,548,036	1,056,621
Netherlands.....	1,187		Curacao.....	12,528	6,300
Thread, cotton and linen			Iron:		
yarn.....	221,001	534,417	Domestic ware.....	169,284	107,954
United States.....	33,819	15,424	United States.....	143,192	89,928
United Kingdom.....	174,132	417,377	United Kingdom.....	18,038	17,868
France.....	3,947	1,621	Netherlands.....	4,319	
Netherlands.....	1,002		Spain.....	1,941	
Italy.....		15,387	Iron manufactures, n. e. s.....	259,959	189,392
Spain.....	8,332	81,745	United States.....	239,948	123,080
Panama.....		1,783	United Kingdom.....	13,746	14,528
Cloths, woollens, etc.....	3,934,222	3,226,818	Netherlands.....	553	
United States.....	1,203,265	483,000	Curacao.....		961
United Kingdom.....	2,327,788	2,450,345	Unfinished and structural	163,262	45,578
France.....	89,971	240,471	United States.....	162,479	44,482
Netherlands.....	4,479		United Kingdom.....	783	317
Italy.....	72,595	23,811	Trinidad.....		779
Spain.....	234,282	27,714	Pipes and tubes.....	281,542	81,838
Trinidad.....	1,417	1,417	United States.....	272,868	80,271
Cotton, raw.....	167,385		United Kingdom.....	2,776	81
United States.....	158,762		Netherlands.....	5,692	
United Kingdom.....	8,623		Trinidad.....		1,024
Disinfectants.....	38,270	17,646	Nails.....	59,637	50,542
United States.....	29,009	11,787	United States.....	54,824	48,399
United Kingdom.....	9,194	5,743	United Kingdom.....	4,813	982
Drugs, medicines, and chem-			Lamps, lanterns, and accesso-		
icals.....	952,563	815,900	ries.....	18,965	12,709
United States.....	629,427	661,224	United States.....	17,836	12,608
United Kingdom.....	24,322	55,311	Lard.....	70,177	14,738
France.....	236,126	72,509	United States.....	70,177	14,198
Italy.....	33,945	18,697	Leather.....	261,066	194,681
Spain.....	26,350	6,597	United States.....	206,685	187,112
Netherlands.....	1,219		France.....	34,605	3,672
Trinidad.....		1,068	Spain.....	3,530	2,019
Earthenware and crockery			United Kingdom.....		1,435
United States.....	99,990	138,085	Machines and machinery,		
United Kingdom.....	26,032	78,500	n. e. s.....	104,455	90,781
United Kingdom.....	63,742	60,365	United States.....	89,996	76,172
Netherlands.....	7,256		United Kingdom.....	6,371	11,247
Italy.....	1,177		France.....	4,937	
Trinidad.....		2,688	Trinidad.....		1,892
Panama.....		1,427	Materials for hats and unfin-		
Electrical apparatus.....	194,252	128,590	ished hats.....	51,482	34,634
United States.....	188,568	125,900	United States.....	9,991	15,578
United Kingdom.....	4,958	2,756	United Kingdom.....	12,435	11,368
Electric lamps.....	5,320	6,762	France.....	5,353	807
United States.....	4,340	6,549	Italy.....	13,912	5,043
Electric light bulbs.....	36,519	14,471			
United States.....	35,594	14,181			

364 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

Articles and countries of origin.	1917	1918	Articles and countries of origin.	1917	1918
Materials for hats and unfinished hats—Continued.			Perfumery—Continued.		
Spain.....	\$5,479	.....	Italy.....	\$1,441	.....
Colombia.....	4,319	.....	Spain.....	3,561	\$900
Office supplies.....	32,179	\$32,154	Pumps.	19,043	12,482
United States.....	28,171	30,000	United States.....	18,821	15,287
United Kingdom.....	3,586	1,800	United Kingdom.....	222	.....
France.....	.....	167	Railway materials.	117,192	84,347
Oils:			United States.....	105,211	82,719
Machine.....	65,981	74,970	United Kingdom.....	8,774	859
United States.....	64,463	73,120	Porto Rico.....	2,725	.....
Trinidad.....	1,499	1,791	Trinidad.....	.....	558
Gasoline and benzene.....	316,244	131,272	Rubber tires.....	3,862	2,032
United States.....	269,912	128,971	United States.....	3,680	2,032
Curacao.....	9,222	750	Rubber manufactures.....	59,613	42,385
Netherlands.....	5,820	.....	United States.....	52,295	38,212
Trinidad.....	4,290	1,551	United Kingdom.....	3,511	4,173
Kerosene.	225,126	128,051	France.....	2,435	.....
United States.....	223,126	126,835	Sardines.....	97,686	25,456
Trinidad.....	1,894	1,216	United States.....	18,011	9,570
Linseed.	30,294	41,801	Spain.....	76,310	15,298
United States.....	26,810	40,571	France.....	1,608	.....
United Kingdom.....	2,705	.....	Soda (except silicate).....	59,613	177,295
Trinidad.....	.....	1,250	United States.....	53,265	143,719
Olive oils.	87,931	41,579	United Kingdom.....	3,511	33,291
United States.....	3,004	3,519	France.....	2,435	.....
France.....	6,819	5,688	Spices and groceries, n. e. s. . .	87,821	84,951
Italy.....	74,702	31,432	United States.....	77,845	79,730
Spain.....	2,910	122	Spain.....	3,595	4,490
Olives and capers.	13,595	16,455	Stearin.	220,333	187,866
United States.....	2,890	1,400	United States.....	220,333	187,666
France.....	1,700	818	Tools.	97,372	58,824
Spain.....	8,171	13,274	United States.....	82,387	35,555
Italy.....	.....	851	United Kingdom.....	12,211	22,512
Paints.	83,440	37,639	France.....	1,943	254
United States.....	74,207	34,120	Toys.	39,198	9,654
United Kingdom.....	6,133	166	United States.....	26,729	7,736
Trinidad.....	2,016	3,519	Spain.....	6,405	243
Enamel and colors.	61,397	33,015	France.....	5,203	639
United States.....	57,146	32,000	United Kingdom.....	.....	622
United Kingdom.....	2,374	542	Wine.	256,386	273,694
Paper:			United States.....	11,823	18,031
Print paper.....	142,722	52,536	United Kingdom.....	13,961	11,039
United States.....	142,722	52,363	France.....	54,886	35,686
Wall paper.....	11,009	3,473	Italy.....	23,752	74,732
United States.....	3,286	1,214	Spain.....	150,096	125,661
United Kingdom.....	.....	2,259	Wire:		
Cigarette paper.	41,642	51,865	Barbed.....	65,010	31,855
Spain.....	41,642	51,865	United States.....	63,523	25,623
Other paper products.	334,560	21,390	Galvanized.....	63,884	27,633
United States.....	266,560	18,143	United States.....	63,313	27,633
United Kingdom.....	3,377	581	Woolen goods:		
France.....	4,301	371	Wool.....	46,408	27,797
Italy.....	23,192	.....	United Kingdom.....	45,109	27,797
Spain.....	27,463	2,109	United States.....	1,299	.....
Paraffin.	148,424	312,682	Other.....	127,700	96,623
United States.....	148,424	312,682	United States.....	58,621	16,387
Perfumery.	176,047	162,075	United Kingdom.....	101,970	73,265
United States.....	62,331	90,978	France.....	2,239	.....
United Kingdom.....	12,287	24,741	Spain.....	9,285	4,109
France.....	96,381	45,456	Panama.....	.....	1,947

VENEZUELAN COMMERCE DURING 1917, 1918, AND 1919.

During the last two years of the war Venezuela's foreign trade showed a series of decreased totals on the whole, and where occasional increases occurred they were due to higher prices for the smaller quantities of goods or produce, and also to the exports of corn and beans to the United States. The entry of the United States into the war greatly affected the country's trade on account of the import and export restrictions imposed and the shortage of ocean tonnage.

But the country was spared the trials of those less fortunate or less wisely governed. In the early days of the European War Gen. Gomez issued an appeal to all classes of Venezuelan society urging

them to bend every energy to increase the national production of food. The response was general, the seasons were favorable, high prices added a stimulus, and during the years that followed Venezuela not only did not suffer from the lack of foodstuffs formerly imported in large quantities, but was able to export quantities of corn, meal, lard, coconut oil, sugar, tobacco, beans, and beef to the neighboring islands of the West Indies and to the Allied countries, in addition to maintaining production of the usual staples, coffee, cacao, hides, balata, and gold.

Because of the export restrictions of the belligerent powers it was impossible to obtain goods abroad, except at very high prices and in limited quantities, and though for the first time in the commercial history of the nation merchants went as far as Japan in search of salable goods, the total imports for 1918 amounted to only 77,244,950 bolivars (\$14,908,275), whereas exports, being restricted less severely, amounted to 97,613,154 bolivars (\$18,839,339), giving a balance of trade in Venezuela's favor of more than 20,000,000 bolivars. It was impossible to import gold to redress this balance, and exchange swung violently in Venezuela's favor; for months American dollars were purchasable at rates as low as 4.20 bolivars (par is 5.20), and in Maracaibo at one time the rate was 4 bolivars, or 77 cents. Many merchants were wise enough to purchase large amounts of dollars at this price.

These so-called "favorable" exchange rates reacted very unfavorably upon the Venezuelan export trade and upon the price of exportable commodities. Coffee, cacao, and hides dropped to a very low level in price, and the mining of gold in the Ciudad Bolivar region became temporarily impossible. Also, these rates put a stop for the time being to the investment in Venezuela of American and other outside capital, which, with the encouragement of the Venezuelan Government, had been coming in on an increasing scale. The two American and two British banks in Caracas, having no way to obtain the national currency except by the sale of the dollar or sterling drafts, had a very difficult situation to face.

At the close of 1918 the first effect of the armistice was very unfavorable commercially. Many merchants had large stocks of goods on hand, purchased at high prices during the war, and, believing that peace meant a sudden drop in values, they threw these on the market for what they would bring. For some weeks prices of textiles were lower in Caracas than in New York or Manchester. The large German firms of the country had been prevented from obtaining any large stocks of goods by the various "trading with the enemy" laws, and, having much ready cash in hand, they took full advantage of these offerings and ultimately obtained large profits.

On account of the general restrictions and difficulties encountered in obtaining merchandise, more especially those items on the conservation lists of the Allies, each merchant had sent in orders far exceeding his immediate or season's requirements (or perhaps sufficient for the entire country), hoping that his individual permit might get through and large profits be realized at a stroke, but when it was seen that permits for all would be granted at the same time all hastened to cancel their orders, fearing also the predicted general drop in values. It was early in 1919 before it was seen that there would be no general lowering of prices, but, on the other hand, an

increase in nearly all lines, and this situation, combined with the large profits being realized from export products, precipitated a rush of buying that only ended by the middle of 1920, when all markets collapsed.

Roughly, it may be said that Venezuela imports annually about \$20,000,000 worth of general merchandise and materials, the principal items being: Cotton manufactures, \$4,070,000; knit goods, \$400,000; chemicals, drugs, and medicines, \$2,702,000; wheat flour, \$1,500,000; machinery, \$500,000; automobiles, \$500,000; paper and paper products, \$400,000; wines and liquors, \$480,000. All manufactured articles not unsuited to the Tropics are imported, with the exception of shoes, candles, matches, salt, boxes, ready-made clothing, trunks, and leather goods such as harness and saddlery, upon which the tariff rates are prohibitive. The demand for luxuries is small, being limited to about 15 per cent of the total population and to the larger cities.

Exports average annually about \$23,000,000 and consist principally of coffee and cacao, together with hides and skins, balata, sugar, and mineral and forest products.

The details of conditions in Venezuela in 1917 and 1918 do not apply in any way to the situation in 1919. On the contrary, it would be difficult to cite a more relatively prosperous country in all of Latin America during that period. Coffee, the country's great staple of export, was selling at prices equal to almost three times its prewar level; the past crop was excellent in quality and volume; prospects for the new season could not have been better, and this greatly influenced expansion in all lines of trade and domestic industrial development as well. Cacao, the second product in importance, was in a similar condition, the United States taking large quantities for re-export to Europe. Hides were selling at about 50 cents per pound in New York and another important item, goatskins, at more than a dollar a pound. The import statistics of the United States for June, 1919, showed imports of Venezuelan products to the amount of \$3,340,000 for that month. Not one but several shipments of American gold coin of more than one million dollars were received. Wages in all lines of work advanced, and the prices of shares of all the well-managed native industrial concerns doubled during the first half of the year in question. With the certainty of large increases in the customs revenue, the Government announced that its large gold surplus would be invested in public works, and work was begun on a number of much-needed improvements, including the new sewerage system for Caracas.

There were several strikes for higher wages, all of which were promptly won by the workers, but there was no chronic labor agitation. The balance of trade between the country and the United States continued heavily in favor of Venezuela. For the 12 months ended June 30, 1919, the United States purchased from Venezuela products to the value of \$19,732,709 and sold to that nation only \$9,275,680, although heavy purchases of merchandise during the latter part of 1919 and the early months of 1920 soon wiped out this balance of trade.

Every prejudice and inclination is in favor of Americans and American goods, and it is the duty of every American exporter and

manufacturer to study this market, to learn to provide more things that Venezuela needs and desires, and to render better service in exporting.

Were it not for the fact that the Venezuelan tariff law imposes a 30 per cent surtax upon all imports from the Caribbean dependencies of other powers, a thriving trade would exist with Porto Rico, as Venezuela charcoal, coal, fertilizer, corn, meat, and salt are in demand there. Venezuelan imports from Porto Rico are necessarily confined to the few articles on the free list, and schooners going laden to Puerto Rico are usually obliged to return in ballast. The same conditions also apply to the British, French, and Dutch West Indies.

The name of Japan does not appear in the list of countries supplying Venezuelan imports during 1918 and 1919, but, nevertheless, the entrance of Japanese merchandise into Venezuela upon a considerable scale is one of the most noticeable of recent commercial developments. In Caracas many of the fancy-goods stores have nothing but Japanese articles in stock, and many small hardware products from the same country are to be found in other establishments. This merchandise, though purchased in Japan, is shipped via the United States, invoiced there, and credited to this country in the statistics. It is generally true that Venezuelan statistics show only the country from which the shipment to Venezuela was made and not the country of origin of the goods.

AMERICAN TRADE WITH NORTH-COAST COUNTRIES.

The commerce of the United States with the north-coast countries, Colombia, Venezuela, and the Guianas, during 1920 amounted to 13 per cent of its aggregate South American trade. Colombia, which ranked fourth among South American countries, outstripped the other territories of this group considerably during 1920, and, with the exception of Bolivia, showed the greatest relative growth. American exports to Colombia increased from \$24,143,646 in 1919 to \$59,133,277 in 1920, or 144 per cent. The principal gains occurred in cotton manufactures (which increased \$15,000,000), pipes and fittings, steel rails, wire, sheets, plates, structural iron and steel, etc. Imports from Colombia increased only from \$42,911,409 in 1919 to \$53,641,738 in 1920, or 25 per cent. Coffee is practically the only exportable product showing any appreciable increase during 1920.

American import and export trade with Venezuela during 1920 increased 10 per cent, amounting to \$51,593,258, as compared with \$46,539,987 in 1919. Exports to Venezuela more than doubled, increasing from \$14,429,202 to \$29,204,396, chiefly owing to larger shipments of cotton manufactures, wheat flour, automobiles, pipes, fittings, and wire. American imports from Venezuela declined 30 per cent, from \$32,110,785 in 1919 to \$22,388,862 in 1920. Coffee and hides, shipments of which amounted to approximately \$11,000,000 less in the latter year than in 1919, were chiefly responsible for this decline.

SUMMARY OF VENEZUELAN TRADE CONDITIONS IN 1920.

Statistics covering imports to the United States from South America during the first half of 1920 reflect generally the confidence

felt in business circles and the optimistic tone of the market. As a result of the sudden break in prices for coffee, hides, cacao, rubber, etc., imports suffered a decline. Though no actual decrease took place until the third quarter of the year, statistics during the second three months of 1920 failed to show as great an increase in percentages as those of the first three months. During July, August, and September there was a drop in import values of about 8 per cent as compared with the corresponding months of 1919, only imports from Cuba and Mexico showing increases during the third quarter. During the last quarter of 1920 imports into the United States from Venezuela fell off by about 40 per cent in common with those from other South American countries.

The market depression and the general unfavorable exchange situation during the last half of 1920 are not observable in the statistics covering exports to Venezuela, the figures for the last quarter of 1920 showing a greater percentage of increase over 1919 than any other period of the year. This can be accounted for partly by the fact that goods shipped during the period were ordered during the early part of the year, when many plants were unable to fill orders immediately. While no moratorium has been declared in Venezuela and there has been no port congestion, the general conditions are those of the other Latin American countries, brought about by the extraordinary period of prosperity (following the high prices received for export products during the war and during the year and a half following the armistice), which resulted in an era of inflated values, intense speculation in all lines, and a general overextension of credits, both by the foreign banking institutions in the country and by the native banking concerns and merchants.

UNFAVORABLE FINANCIAL CONDITION.

The trend of the financial situation in Venezuela during December, 1920, was unfavorable, and it was felt that the bottom of the decline had not been reached. During the period of prosperity in the later war years and following the armistice, credit was abused for speculative purposes, domestic inflation took place, and merchants speculated in export products (principally coffee), in merchandise (principally cotton manufactures), and in foreign exchange, being attracted by the low value of the pound sterling, French franc, and German mark, chiefly the last two. Commodity prices were caused to attain an unwarranted high level, and when it became evident that prices could not be maintained at this level, because imported goods were much cheaper than the values of the heavy overstocks purchased during the latter part of 1919 and the first quarter of 1920, the banks naturally began to curb credits, not only for the purpose of protecting themselves but also to discourage and reduce speculative holdings and to bring about a most necessary deflation. The curtailment of the foreign demand for export products of Venezuela hastened the drop in prices, particularly with respect to coffee, cacao, and cotton. It was predicted that the general price level of Venezuela's export products would reach in January a still lower level, and that a general business depression was inevitable.

Failures among the smaller concerns were already occurring, and more serious failures were feared, as it was known that several of the largest importing houses which had speculated heavily in coffee and foreign exchange were only being sustained by their creditors for the time being, during the period of liquidation. It was considered by many that the credit restrictions were dangerously drastic at a critical time.

An outstanding feature of the situation was the fact that British houses were continuing to allow the usual credits to their well-established customers, whereas the largest American export commission houses of New York would no longer receive export products on consignment or "open account" and the American branch banks in Venezuela no longer made advances on such shipments, unless sold at the market on arrival.

EFFECT OF EXCHANGE.

As a result of the above conditions, supplemented by the existence of a heavily overstocked market of imported merchandise, a greatly decreased demand from the interior on account of the drop in coffee values, and a present unfavorable exchange rate with the United States, the demand for further importation was dull and will continue so until prices for export products in foreign countries have increased somewhat. There had occurred already a marked decline in the imports of American goods.

At the beginning of the last quarter of 1920 it was hoped that exports of sugar to the United States, estimated at some \$4,000,000, and exports of live beef cattle to Cuba, amounting to some \$2,000,000 in value, would help the exchange situation by releasing additional New York drafts in the Caracas and Maracaibo markets, but the drop in sugar prices prevented the export of the surplus sugar crop from the Maracaibo district, and a threatening political condition in November held the cattle money out of the country for the time being, at least; so the desired effect on exchange was not realized and the dollar continued at a heavy premium of about 13 per cent. When exchange reaches a point above a 10 per cent premium, the Venezuelan importers often refuse to purchase drafts but offer to pay in gold in a Venezuelan bank.

OUTLOOK FOR FUTURE.

With an overstocked market in textiles, which constitute the principal imports of the country, with low prices for export products (though these prices are not less than for normal prewar years when plantations existed at a profit), and with a heavy burden of speculation to overcome, it may be stated that the Venezuelan market will not be a very active one for several years to come. There is not a sufficient population to permit any great increase in production in any line, with the possible exception of the cattle industry, to compensate for the prevailing low values of exports. A significant feature of the situation during the last part of 1920 was the fact that British houses continued to offer the same long terms of credit, usually six months, to their long-established customers; and the

establishment of new agencies and branches of European houses continued, although this latter development may have been due rather to plans made earlier, just after the armistice.

As regards trade with the United States and the holding of the position gained during and just after the war, two things are most necessary—the American exporter must pay greater attention to the details of exporting, make a better study of the needs of the Venezuelan market, and base his credit operations on the economic factors of the country; and better ocean transportation facilities must be provided in competition with the greatly increased and much better service from Europe. The bulk of the trade with Venezuela is carried on through export commission houses which conduct the business with their Venezuelan clients on the well-known and long-used “open account” basis—that is, crediting on account the export products received, and charging to the client the general merchandise shipped. There is very little specialization in lines of trade in Venezuela, most stores carrying a general stock and buying long lists of miscellaneous goods through their commission house as needed for the season. The services of the export commission houses have been greatly handicapped in the United States by the failure of the manufacturer to cooperate properly with the exporters in the important matter of packing and shipment.

PARCEL-POST TRADE.

Before the war France, Germany, and Italy led in this trade by parcel post, which is employed principally for the conveyance of fine goods of small weight, such as silks, perfumes, fine feathers, buttons, laces, trimmings, and medicines. The cost of sending a parcel-post package from France, Italy, or Germany to Venezuela is considerably less than the cost of sending similar packages from the United States. Formerly this service was especially favored because of the freedom from customs fines and penalties. Now, however, by a new law the recipient of a package is required to sign an acceptance in which he assumes all responsibility for the correctness of the declaration, and in case of any discrepancy in this, fines and confiscations are imposed the same as in importation by freight. Many American exporters, particularly those sending cheap jewelry to persons of small responsibility, have suffered losses because of confiscation of the goods by the customs authorities and the refusal of the consignee to pay for them. Parcel-post packages should never be sent to the consulate or any other person without previous advice, for, unless the shipper and the articles are known, the consignee can not risk signing an acceptance.

Parcel-post shipments into Venezuela come under the direct supervision and handling of the customs at the port of entry, liquidation of import duties and charges being made at the port of entry before shipment can be made into the interior to final point of destination.

When the writer was in Venezuela, there was universal complaint on the part of importers regarding the long and vexatious delays in the transmission of parcel-post packages between port of entry and final destination. As an example, such a condition of congestion, caused by inadequate storage and handling space and lack of personnel, existed in La Guaira, the chief port of entry of parcel-post

matter, during the last half of 1920, that it often took two months to get a package into the hands of the addressee in Caracas, 23 miles away, after its receipt at La Guaira. However, the customhouse at La Guaira was being enlarged and more ample space provided for parcel-post traffic. Better service was promised, a 20-day limit being fixed between time of receipt at port of entry and delivery to addressee in Caracas and this limit was to be shortened later. Merchants in Caracas and other towns of the interior have been forced to adopt the system of giving powers of attorney to agents resident in the ports of entry, to fill out the necessary provisions of acceptance of responsibility for parcel-post shipments as required by the new customs regulations covering such importations. The post office authorities had also adopted the method of periodically publishing in the daily newspapers of the capital the lists of parcel-post shipments arriving, stating name of consignee, name of shipper, and class of contents.

Merchandising in Venezuela, with the exception of the drug line (and also hardware in a few instances), is very general in its character; there is little specialization in the lines carried, and the stores are usually general-merchandise establishments, both wholesale and retail. The parcel-post system offers an excellent medium for rapid deliveries of seasonal goods, new styles, novelties, and goods of light weight, small bulk, and high price, enabling the importers to keep on hand and on display a constantly changing, attractive, small stock of seasonal merchandise on which a good profit is realized and which serves to attract customers. The system is also a great boon to the small importers of the interior in out-of-the-way places where communication is difficult and freight transport slow and costly. The export trade of the United States with Venezuela can be greatly increased by judicious use of the parcel-post service, and new business can be created in certain lines entirely by correspondence and the use of small, often-renewed catalogues, the loose-leaf system being recommended. Jewelry novelties, notions, ornaments, fancy dry goods, haberdashery, lingerie, and allied lines can all be handled by this method. At present the system is most used by the export commission houses, their Venezuelan clients ordering certain articles shipped to them in this manner as a means of saving time and freight charges.

Under existing conditions, however, American trade with Venezuela by parcel post is heavily handicapped in comparison with that from European countries which have entered into advantageous parcel-post conventions with Venezuela. It costs more to send a parcel-post shipment of the same weight, bulk, and contents to Venezuela from the United States than from Germany, France, Italy, or Spain. This difference is due to the rates charged by the United States on export matter to Venezuela, these being double (or more) the charges of European countries. Prior to the war the bulk of Venezuela's parcel-post imports came from France, with the United States doing about 84 per cent as much business of this character as France. During and since the war, however, the bulk of the imports by parcel post have come from the United States.

According to the convention concluded between Venezuela and the United States on May 1, 1889, the postal service of the Venezuelan

Government is allowed to charge 1.50 bolivars (\$0.29) on each parcel-post package of 5 kilos (11.02 pounds) or less coming from the United States, and the United States is allowed to charge a like amount on matter coming from Venezuela; but the United States does not do this in actual practice, charging only the usual rate of 5 cents, the same as on matter imported from other foreign countries into the United States. The Venezuelan postal service charges a fixed rate of 1.75 bolivars (\$0.34) on matter from European countries, while its charge on matter from the United States is only 1.50 bolivars (\$0.29) per package.

Two charges are imposed on each package dispatched from the United States to Venezuela or vice versa—an export tax collected in the country of origin and forming a part of its revenue; and another, in reality an export tax, collected in the country of destination and forming a part of the revenue of the latter country. The export tax (charge) in both countries (Venezuela and the United States) is 8.25 bolivars (\$1.59) for 5 kilos (11.02 pounds). The import tax charge is 1.50 bolivars (\$0.29) in Venezuela, and actually 5 cents in the United States, on packages from Venezuela, although by the terms of the convention the United States has the right to charge an equal amount, namely, \$0.29.

	Bolivars.
Tax belonging to the United States-----	8. 25
Tax belonging to Venezuela-----	1. 50
	<hr/> 9. 75
	<hr/>
Tax belonging to European countries-----	3. 25
Tax belonging to Venezuela-----	1. 75
	<hr/> 5. 00
	<hr/>
Or:	
Tax belonging to European countries-----	2. 25
Tax belonging to Venezuela-----	1. 75
	<hr/> 4. 00

From the above it is seen that parcel-post packages weighing 5 kilos or less from the United States are penalized by either 4.75 bolivars (\$0.916) or 5.75 bolivars (\$1.11) in competition with European countries, of which Spain enjoys the lowest rate by virtue of the recent favorable convention with Venezuela.

On matter from the United States, Venezuela collects its own charges in the form of a fixed import tax of 1.50 bolivars (\$0.29), while on packages from Europe the European Governments collect these charges and remit to Venezuela every six months. American exporters to Venezuela would be greatly benefited by a revision of the old parcel-post convention between the two nations and also by a consistent decrease in the export charges by the United States on parcel-post shipments to Venezuela, making them equivalent to those now in force by European countries competing in this trade.

Many of the smaller manufacturing plants of the United States (even those on the Pacific coast) which are making a varied line of goods suitable for the Venezuelan, Colombian, and Ecuadorian trade can, by using correspondence and catalogues in Spanish, secure

considerable business through the parcel-post system of shipment directly to customers in those countries. Heretofore the matter of credits and payment has been a stumbling block in the development of trade by this means, but certain American branch banks have provided a system whereby the goods can be sent directly to the bank at the port of entry or final destination, according to the regulations of the country in question, and payment can be secured before or at the time of actual delivery to the customer for a small charge entirely consistent with the service rendered. Latin American trade lists are now available also, showing the relative size of firms, etc., their general line of merchandising, and other valuable information.

BANKS AND BANKING.

LISTS OF NATIVE AND FOREIGN INSTITUTIONS.

Up to the time of the establishment of foreign banks in Venezuela banking was controlled chiefly by three native institutions and their agencies—the Bank of Venezuela, the Bank of Caracas, and the Bank of Maracaibo. Caracas is the banking and commercial center of the country.

The chartered banks of Venezuela now number four, as follows:

Banco de Venezuela; capital, 12,000,000 bolivars (\$2,316,000).

Banco de Caracas; capital, 8,000,000 bolivars (\$1,158,000).

Banco de Maracaibo; capital, 1,250,000 bolivars (\$241,250).

Banco Comercial de Maracaibo; capital, 400,000 bolivars (\$77,200).

The first three native banks are "banks of issue," possessing the right to issue paper currency.

The foreign banks now established in Venezuela are as follows:

Banks.	Established (Caracas).	Agencies and branches in Venezuela.
National City Bank of New York.....	Nov. 17, 1917.....	Ciudad Bolívar, Maracaibo.
American Mercantile Bank of Caracas, affiliated with Mercantile Bank of the Americas.	Nov. 14, 1917.....	La Guaira, Maracaibo, Puerto Cabello, Valencia.
Royal Bank of Canada.....	Oct. 1, 1916.....	Ciudad Bolívar, Puerto Cabello, Mara- caibo.
Commercial Bank of Spanish America (now affiliated with Anglo-South Ameri- can Banking Corporation, London).	Long established in Venezuela.	Caracas, Puerto Cabello.
Deschanel International Corporation of Venezuela.	Dec. 12, 1919.....	Caracas, La Guaira.
Hollandsche Bank Voor West-Indie (Cura- çao Trading Co.).	.....	Caracas, La Guaira; also Willemstad, in Curaçao.

NOTE (November, 1920).—Mercantile Overseas Corporation no longer in existence in Venezuela. Operations discontinued. Mercantile Bank has no branch or true agency in Ciudad Bolívar.

Most of the important importing and exporting houses of the country do a private banking business and some pay a higher rate of interest than the regular banks. The largest of these firms are as follows:

H. L. Boulton & Co., all large cities of Venezuela.

Blohm & Co., all large cities.

Hellmund & Co., all large cities.

J. Boccardo y Cía, Caracas, Valencia.

Curaçao Trading Co., of Caracas, all large cities.

L. Perez Diaz & Perrit y Cía, Caracas, La Guaira.

Dalton & Co., Ciudad Bolívar, and Port of Spain, Trinidad.

BANK OF VENEZUELA.

The Bank of Venezuela was established March 24, 1882, as the Commercial Bank; its name was changed in 1890 to the Bank of Venezuela, capitalized at 8,000,000 bolivars (\$1,544,000). It was again reconstituted in 1899 with 15,000,000 bolivars (\$2,895,000) of

capital, divided into 506 shares of 20,000 bolivars (\$3,860) each, subscribed in the country by national and foreign merchants. Three-fourths of the capital had been paid in by March, 1904, the other not being required.

The administration consists of five directors, one of whom is elected president by the general assembly of the bondholders. Agencies are established in La Guaira, Puerto Cabello, Valencia, Maracaibo, Coro, San Cristobal, Barcelona, Cumana, Carupano, Porlamar, Juan Griego, Guiria, Maturin, Ciudad Bolivar, Trujillo, Maracay, Ocumare del Tuy, Rio Chico, and San Felipe, the last five agencies having been established in 1915 at the suggestion of the Minister of Finance, in order to facilitate the business and trade of the interior regions of the country as well as the collection of Government revenues.

The principal source of profit of the Banco de Venezuela is its service as fiscal agent of the Government of Venezuela in receiving and disbursing of Government funds, for which service it has been paid a 2 per cent commission. A dividend of 12 per cent was paid in 1914. Capital in 1918 stood at 9,000,000 bolivars (\$1,737,000), paid up, and reserves 2,905,217 bolivars (\$560,707). The capital of this bank has since been increased to 12,000,000 bolivars (\$2,316,000), with the reserve fund, on May 31, 1920, at 2,244,823 bolivars (\$433,251) and the guaranty fund at 1,179,812 bolivars (\$227,704). Currency of the Banco de Venezuela in circulation May 31, 1920, amounted to 17,879,250 bolivars (\$3,450,695), with an additional 375,690 bolivars (\$72,508) on hand in the main office at Caracas and 5,464,920 bolivars (\$1,054,730) on hand in branches throughout the country, making the total bill issue on May 31, 1920, 23,719,860 bolivars (\$4,578,933). Loans amounted to 27,387,969 bolivars (\$5,285,878) and the cash on hand to 45,735,788 bolivars (\$8,827,007) in gold coin, 1,424,306 bolivars (\$274,891) in silver, and 939 bolivars (\$181) in nickel, or a total of 48,588,643 (\$9,377,608). Earnings totaled 6,627,984 bolivars (\$1,279,201). The sight deposit of the National Government totaled on May 31, 1920, the sum of 61,536,944 bolivars (\$11,876,630), this huge sum being payable on demand to the Government in gold coin, according to the contract with the Government and certain subsequent regulations imposed by the Ministry of Finance (Hacienda).

The shares of the Banco de Venezuela were quoted, August 14, 1920, at 160 per cent—coupons at 162 per cent. A considerable reduction in the market price of the stock was registered after the establishment of the Royal Bank of Canada in Caracas on October 1, 1916, because of the lowering of interest rates and the selling of exchange on a 4-point margin instead of the old margin of 10 points. On account of the entry of foreign banks into the field, the Banco de Venezuela and other native banks have had to lower interest rates to as low as 8 per cent and to handle telegraphic transfers of funds and drafts at as low as $\frac{1}{2}$ per cent.

In September, 1920, when the financial and commercial situation became acute and credits were heavily restricted by all the banks in Venezuela, interest rates were again raised, the prevailing rate being 10 per cent for first-class loans. This increase was put in force by all the foreign banks at about the same time.

At the same time the bank's margin on exchange transactions was increased from 4 to 10 points in order to afford greater protection during the period of violent fluctuation.

In 1920 a proposition was submitted to the stockholders to increase the capital of the Banco de Venezuela to 24,000,000 bolivars (\$4,632,000). Bondholders were to signify their intention to take up the new issue by the last of September. Late in December it was announced that the new stock had been fully subscribed.

According to the new contract with the Government (published June 26, 1920) the rate of commission was to be $1\frac{1}{2}$ per cent for 1920, $1\frac{1}{4}$ per cent for 1921, and 1 per cent thereafter for a period of eight years from date. The bank is accorded telegraph and postal frank throughout the country. Being the fiscal agents of the Government, this bank is practically under Government control through the Ministry of Hacienda (Finance), and its action in the commercial field is therefore limited to a great extent, although the management is progressive and fully alive to the economic necessities of the country in relation to banking.¹

BANK OF CARACAS.

The Bank of Caracas was established in 1890, exclusively as a commercial bank, capitalized at 6,000,000 bolivars (\$1,158,000). Three-fourths of the capital was paid in, divided into 600 nominal shares of 10,000 bolivars (\$1,930) each, subscribed by resident merchants in the country. Branches of this bank are located at La Guaira, Carupano, Barcelona, Ciudad Bolivar, Puerto Cabello, Coro, and Maracaibo. In other cities it makes use of the agencies of the Bank of Venezuela.

This bank possesses the right to issue 9,000,000 bolivars (\$1,737,000) in bank notes. The issue of bank notes up to within one-tenth of the stock issue is allowed by the charter. A dividend of 8 per cent is paid. The capital in 1919 stood at 6,000,000 bolivars (\$1,158,000), of which 4,500,000 bolivars (\$868,500) had been paid up.

The balance sheet of the Banco de Caracas has shown for the past three years a cash position fluctuating between 3,000,000 and 5,000,000 bolivars, the proportion represented by gold coin having increased from 1,700,000 bolivars (\$328,100) in December, 1916, to 2,400,000 bolivars (\$463,200) in February, 1919. The total increase in gold coin held by the two leading native banks of Caracas was about 7,500,000 bolivars (\$1,447,500), while the advance in the total gold imports and exports was about 27,000,000 bolivars (\$5,211,000), with a net increase of about 20,000,000 bolivars (\$3,860,000) of imports over exports.

For a number of years past the policy of the Banco de Caracas has been a very conservative one; ordinarily, only first-class real-estate mortgages are taken as security for loans, the bank having the reputation of specializing in this class of business. Since the establishment of the foreign branch banks in the country this bank has

¹ The president of the Banco de Venezuela is one of the members of the loan and credit committee of the American Mercantile Bank of Caracas, and under his direction the Banco de Venezuela extends banking assistance to all the foreign branch banks located in the country and cooperates with them to the fullest possible extent.

adopted numerous reforms and more modern commercial methods, and has made excellent progress in many new lines.

The following statement shows the condition of the Banco de Caracas as of June 30, 1920:

	Bolivars.
Gross profits for the half year.....	630,061
Plus former surplus.....	93,383
	723,444
Less discounts on obligations due.....	105,674
	617,770
Less expenses and amortization fund.....	115,047
Leaving a net profit for the six months of.....	502,723
Amount belonging to reserve fund.....	40,934
Amount belonging to guaranty fund.....	20,467
	61,401
	441,322
Amounts received by—	
Manager.....	3,667
Directors.....	3,666
Employees.....	11,000
	18,333
	422,989
Amounts distributed—	
In April, 1920.....	60,000
In June, 1920.....	60,000
	120,000
Leaving.....	302,989
Dividend of 300 bolivars per share ordered by directorate.....	180,000
Balance left in reserve for next semester.....	122,989

The profit-and-loss account June 30, 1920, was:

Balance left over from preceding semester.....	93,383
Gross profits.....	630,061
	723,444
Less—	
General expenses.....	109,489
Depreciation, building.....	3,718
Insurance.....	1,840
Discounts of obligations due.....	105,674
	220,721
Net earnings, six months.....	502,723

The June 30, 1920, balance sheet of the Banco de Caracas shows the following items of interest: Cash on hand, 3,717,970 bolivars (\$717,568), of which the sum of 2,100,043 bolivars (\$405,308) was held in gold coin. Other assets amounted to 5,379,748 bolivars (\$1,038,291), of which 3,000,886 (\$1,038,291) was in 30-day paper. Loans amounted to 5,379,748 bolivars (\$1,038,291), of which 4,436,347 (\$856,215) was in real-estate mortgage loans. Property held under mortgage was given as 2,796,579 bolivars (\$539,740), and holdings in guaranty amounted to 34,889,923 bolivars (\$6,733,755). Bills amounted to a total of 5,820,000 bolivars (\$1,123,260), with 5,678,800 (\$1,096,008) in circulation. Deposits amounted to a total of 6,136,338 bolivars (\$1,184,313), of which open accounts reached the

sum of 4,390,583 bolivars (\$847,383) and 1,028,885 bolivars (\$198,575) was held in the savings department. The reserve fund was 1,218,901 bolivars (\$235,248) and the guaranty fund 500,000 bolivars (\$96,500).

BANK OF MARACAIBO.

The Bank of Maracaibo was founded in 1889 with a capital of 1,250,000 bolivars (\$241,250), three-fourths of which was paid in.

The administration is carried on by three principal and three supplementary (alternate) directors, five principal and five supplementary members of the assembly of delegates, two principal and two supplementary commissioners, and two fiscal inspectors. The Banco de Maracaibo is also a bank of issue, making the third of the native banks possessing this privilege in Venezuela.

The balance sheet for the month of May, 1920, showed bills in circulation amounting to 1,807,280 bolivars (\$348,805), with 67,720 bolivars (\$13,070) in hand. Cash on hand amounted to 921,447 bolivars (\$177,839), of which 783,250 bolivars (\$151,167) was in gold coin. Deposits amounted to 1,965,970 bolivars (\$379,432). Loans were: Real estate, 974,947 bolivars (\$188,165); real and personal, 28,806 bolivars (\$5,560); and personal (firms), 876,492 bolivars (\$169,163). The reserve fund was 125,000 bolivars (\$24,125).

The Bank of Maracaibo confines its operations to that city and district.

COMMERCIAL BANK OF MARACAIBO.

The Commercial Bank of Maracaibo was established in that city in September, 1915. Its capital is only 400,000 bolivars (\$77,200). but it promised to be of considerable local importance owing to the introduction of new banking methods and relief to the borrower from the high interest rates. The balance sheet of this bank for June 30, 1920, showed a total of 1,352,384 bolivars (\$261,010). Cash amounted to 366,903 bolivars (\$70,812), of which there was 317,628 bolivars (\$61,302) in gold coin, 30,675 bolivars (\$5,920) in silver, 3,950 bolivars (\$762) in bills of the same bank, and 14,650 bolivars (\$2,827) in bills of other banks.

DESCHANEL INTERNATIONAL CORPORATION.

The Deschanel International Corporation of Venezuela, with branches in Paris, New York, Bordeaux, and Zurich, does a general mercantile banking business, maintaining also a savings department in which 5 and 6 per cent is paid on deposits, interest being credited monthly, with the condition that there shall be no loss of interest to date if the deposit is withdrawn before the expiration of the time limit stipulated.

HOLLANDSCHE BANK VOOR WEST-INDIE.

The Hollandsche Bank voor West-Indie in Caracas also maintains a savings department, as do all the other foreign branch banks and the American Mercantile Bank of Caracas.

CHARACTER OF BUSINESS CARRIED ON BY NATIVE BANKS.

The business of the native banks may be outlined as follows:²

Discounts.—Notes and commercial paper.

Loans.—Fixed term, secured by satisfactory guaranties or stocks or other securities of market value.

Credits.—Open accounts secured by stocks or other security.

Deposits.—Checking accounts or term deposits.

Collections.—Collection of coupons, notes, and commercial paper, in Venezuela.

Trust department.—Receipt of all kinds of values in trust under conditions specially arranged.

Brokerage department.—Buying and selling of property, stocks and bonds, and other values in accordance with instructions.

Payments and remittances.—Taking charge of payments in Caracas and throughout the country and making remittances; also foreign business.

Exchange, international.—Taking drafts on foreign banks, issuing drafts, checks, and orders by telegraph and cable, etc.; foreign business.

Letters of credit.—Venezuela and foreign capitals.

Savings bank department.—Operated according to banking regulations.

PROGRESS OF BANKING SYSTEM.

The banking laws of Venezuela established in 1904 a new national bank of issue and a bank of mortgage credit. As a rule, difficulty existed in mortgaging property, despite the natural richness of the country, as the large exporting houses took the mortgages at an annual interest of 12 per cent, a rate too high for encouragement of the industry of the country. Since the establishment of foreign banks in Venezuela rates have been normalized at between 8 and 9 per cent for prime commercial loans (1920), with interest on favorable balances paid by the banks at 4 per cent per annum.

Great progress of Venezuela's banking system began in 1916 and continued throughout 1917, 1918, and 1919. In the Federal District and Maracaibo, banking enterprises were organized, as well as a number of commercial and industrial enterprises. The Royal Bank of Canada, which opened for business in Puerto Cabello in October, 1916, was the first foreign institution to engage, strictly speaking, in the banking business of the Republic. It was also the only banking house of Puerto Cabello that could supply the needs of commerce, as the agency of the Banco de Venezuela can transact only a limited class of business.³

For institutions to become banks of issue, a considerable amount of Government control and supervision is required. The particular operations of these banks are governed by special statutes, and business operations in general by the Code of Commerce. Venezuelan law permits any foreign bank, properly chartered under the laws of its own country, to do business in the Republic upon filing a certification of its charter and duly registering in accordance with the laws.

BUSINESS OF FOREIGN BANKS.

The business of the foreign banks consists largely of commercial loans, usually made by overdrafts, of exchange transactions, etc.

² A great part of the business is in loans by credits in open accounts, often *without* security.

³ Commerce Reports, Dec. 17, 1917, p. 339.

These banks do not, as a rule, make advances on the products of the country, as is often done by the native banks; although advances against products are the specialty of the American Mercantile Bank of Caracas and the Commercial Bank of Spanish America. Deposits are small, and, in the past, foreign banks have found themselves constantly in the need of importing gold, their inability to do which in 1917 completely upset the market.⁴

FACTORS AFFECTING BANKING ACTIVITIES.

Venezuelan silver coins are on a parity with gold. Paper currency issued by the Banco de Venezuela, Banco de Caracas, and Banco de Maracaibo, although not legal tender, is generally accepted at its face value. The circulation of bank notes is limited in the interior because of the usual aversion of the people to paper money, even though it is perfectly guaranteed. Contracts, mortgages, bank notes, and other obligations are payable in gold, with the exception of an obligatory amount of silver limited to 500 bolivars (\$96.50), and the banks that issue notes do so only against deposits of gold, though a certain amount of prime 30-day commercial paper is taken into consideration. The State does not issue notes or compete with the banks in issuing paper money. On the whole, banking legislation is similar to that of the United States. Interest rates range from 8 to 10 per cent per annum for commercial loans; this is not high for a country that needs as much capital as Venezuela.

HANDLING OF DRAFTS.

The handling of drafts forms an important part of the banking business of the country. Foreign drafts on Venezuela are subject to a graduated stamp tax, from 0.05 bolivar, for drafts valued at 25 to 50 bolivars, to 1 bolivar on drafts valued at 501 to 1,000 bolivars (1 bolivar=\$0.193). In case of drafts sent from the interior for collection, the drawee does not pay collection charges or for the stamps, as the purchaser assumes the charges, which were formerly met by certain of the banks. Sending drafts to the banks with documents attached affords no protection to the foreign seller, as the consignee named in the invoice can, for a small sum, secure similar documents from the customhouse (see p. 396). In order to obviate this difficulty and to furnish protection to American exporters, the American Mercantile Bank of Caracas (Banco Mercantil Americano de Caracas) has established branches at La Guaira and Puerto Cabello which receive consignments, charging the importer the current commission of 1 per cent for clearing the goods through the customhouse and reshipping to Caracas or the interior—delivering the merchandise to the importer only against payment or acceptance of the draft, or in accordance with other special instructions by the shippers.

GOLD AND SILVER COIN IN VENEZUELA.

The total increase in gold coin held by the banks of Venezuela and the Bank of Caracas during the past three years was about 7,500,000 bolivars (\$1,447,500), while the advance in the total gold imports

⁴ Commerce Reports, Apr. 8, 1918, p. 98.

and exports was about 27,000,000 bolivars (\$5,211,000), with a net increase of about 20,000,000 bolivars (\$3,860,000) of imports over exports.

According to the experience of expert authorities on the gold situation in Venezuela, about one-half of the gold receipts was in permanent circulation in various parts of the country, most of the rest being held by the remaining banks as a reserve, though at least 25 per cent, or \$1,000,000, is in the hands of the large German houses in Caracas and Maracaibo which had hoarded gold as a means of protection during the war period. Although official confirmation is lacking, reliable sources state that the Banco de Venezuela has gradually converted its receipts into gold coin, until a large portion of the Government deposits on the books of the bank in 1919 (35,000,000 bolivars) was actually represented by gold coin slowly withdrawn from circulation. At various times during 1917 and 1918 the Bank of Venezuela, because of the shortage of silver and paper currency, was forced to disburse gold coin in payment of checks, but as most of this gold was subsequently returned in the shape of deposits no serious effect was sustained.

No gold coin is seen in or around Caracas, the capital, and very little in the other principal business centers of the country, it being held by the banks. But gold and silver coin is used exclusively by the people of the great western Andean region and throughout the sparsely populated llanos in the cattle country, where the gold is hoarded and is consequently lost to circulation. In the commercial centers the paper currency of the banks of issue is the principal medium of exchange. There is an irreducible minimum of paper currency needed for daily commercial use, therefore, with a total of approximately 13,535,610 bolivars (\$2,612,373) issued up to May 31, 1920 (exact figures taken from balance sheets of the three banks of issue), distributed as follows:

Banco de Venezuela: In hand, 375,690 bolivars (\$72,508); in circulation, 5,464,920 bolivars (\$1,054,730).
 Banco de Caracas: In hand, 141,200 bolivars (\$27,252); in circulation, 5,678,800 bolivars (\$1,095,008).
 Banco de Maracaibo: In hand, 67,720 bolivars (\$13,070); in circulation, 1,807,280 bolivars (\$348,805).

Even if the gold reserves of the banks should become depleted there is little danger of a run on these banks to convert paper into gold according to law, as this would immediately stop all business and a moratorium would have to be declared.

The following table shows Venezuela's imports and exports of gold:

[1 bolivar = \$0.193.]

Years.	Gold coin imported.	Gold dust and bars exported.	Net gain for Venezuela.
	<i>Bolivars.</i>	<i>Bolivars.</i>	<i>Bolivars.</i>
1915.....			¹ 30,340,822
1916.....	9,229,886	1,613,676	7,616,209
1917.....	18,448,511	26,617	18,421,894
1918.....	6,149,131		6,149,131
1919.....	46,223,397	2,468,629	43,754,768

¹ Quantity of gold in country.

Therefore the stock of coined gold existing in Venezuela at the close of the year 1919 amounted to 106,252,824 bolivars or \$20,506,795 American gold. The population having been stated as 2,844,618, the actual amount of gold in the country per capita may be estimated to be 37.35 bolivars or \$7.21; the total per capita at the end of 1918 was only 23.16 bolivars, or \$4.63, showing an increase of \$2.58 per capita during 1919 as a result of the heavy importations of American gold to balance the favorable trade balance of Venezuela.

The stock of silver existing in Venezuela is estimated at about 40,000,000 bolivars (about \$8,000,000). In 1918 the per capita in silver was estimated to be 14.82 bolivars, or \$2.26.

INTEREST PAID, BANKING METHODS, ETC.

As a rule no interest is paid on deposits of current account. Time deposits and savings accounts pay 3 per cent. Interest rates were 8 per cent per annum on short-term commercial paper, but this rate has been increased in 1920, in most cases, to 9 per cent on prime commercial paper, and during the latter part of the year, to 10 per cent.

When the National City Bank of New York established its branch in Caracas in September, 1917, it was planned to allow six months credit to merchants, with privilege of extension—leaving the merchants to finance the coffee and cacao growers, instead of advancing funds directly to the planters as was the old German system carried out by the German commercial houses handling exports as well as imports and doing a private banking business. This policy of protection of the merchants is calculated to give prestige with customers that was not enjoyed under the old German system.

The Commercial Bank of Spanish America does a general commercial banking business and acts as export and import commission agent, also making advances on products of export.

All the foreign branch banks, including the American Mercantile Bank of Caracas, have savings departments.

Advertisements of the Deschanel International Corporation announce the payment of 5 and 6 per cent interest on savings and time deposits, with interest credited monthly and no loss of interest to date upon removal of deposits before the expiration of the time limit. This concern also represents a number of European commercial houses and does a general import and export commission business.

EFFECT OF FOREIGN BANKS.

The establishment of foreign branch banks in Venezuela has greatly facilitated business in all lines. Long-term loans and extensive credits have been made possible and credit facilities greatly extended. The native banks have had to meet this new competition by granting more liberal terms to importers and exporters and business people in general.

The abuses of the exchange situation have been corrected, and importers are now purchasing drafts directly from the banks instead of from the exporters who held the paper.

Native banks required excessive security for loans and made as high as 4 per cent in selling and buying drafts. Interest rates have

been lowered from the former figures of 10 and even 12 per cent (or more) to a uniform 8 and 9 per cent under normal conditions.

The entire system of banking in Venezuela has been modernized through the influence of the foreign branch banks, and it may be said that the country is very well taken care of in all financial and banking lines, the service being entirely adequate to the present needs of the country.

STAMP TAXES IN CONNECTION WITH DRAFTS.

As the handling of drafts forms such an important part of banking business in Venezuela, the following points may be of interest in regard to them. Drafts of all kinds must bear stamps according to their value as shown below:

Value of draft.	Stamp required.	Value of draft.	Stamp required.
	<i>Bolivar.</i>		<i>Bolivar.</i>
25 to 50 bolivars.....	0.05	301 to 400 bolivars.....	0.40
51 to 100 bolivars.....	.10	401 to 500 bolivars.....	.50
101 to 200 bolivars.....	.20	501 to 1,000 bolivars.....	1.00
201 to 300 bolivars.....	.30		

For sums larger than those shown above the tax is 1 bolivar (\$0.193) for each 1,000 bolivars or fraction.

In case of drafts from foreign countries sent for collection, according to local custom, the drawee does not pay collection charges or stamps. The purchaser of a draft in Venezuela pays for the stamps, though formerly certain banks assumed this charge.

Foreign branch banks, when affixing stamps on drafts presented in Venezuela for collection, charge for the amount so expended and remit the net proceeds of the draft collected.

In an opinion handed down by the Dirección de la Renta Interna (Internal Revenue Bureau) in Caracas, July 7, 1920, addressed to the various banks of the city, signed by the Minister of Finance (Hacienda) and referring to the application of article 15 of the national stamp law, which deals with stamps on drafts for collection and other similar documents, it was held that no doubt could attach to the meaning of this article, even if "documents" were referred to in a general way, the meaning being for any documents or instruments of any nature whatever in which an obligation or right is expressed, and that drafts for collection were held to be within this meaning and therefore subject to the requirements of the stamp-tax law in order to acquire legal validity and sanction, even in case these documents (such as drafts for collection in Venezuela from the United States or European countries) do not originate in the country. Their effect is in Venezuela, and recourse is had to Venezuelan public functionaries for the effects of the laws, therefore drafts and other foreign documents used in Venezuela are subject to the payment of the usual stamp taxes required by the Ley del Impuesto Nacional de Estampillas, article 15.

BANKING LAWS OF VENEZUELA.

In a report dated July 6, 1918, the American minister at Caracas writes that according to the law formerly in force and also the one

that had just been enacted by the Congress and approved by the Provisional President, banks in Venezuela are classified in three groups, as follows:

1. Deposit, drawing or checking, and loan and discount banks.
2. Banks of issue.
3. Real-estate and mortgage banks.

BANKS OF DEPOSIT.

Banks included in the first group may be established in the same manner as any other commercial firm—that is, by one individual, by a private firm, by silent partnership of shareholders, and by limited stock companies. Foreign capitalists desiring to establish a bank of this kind in Venezuela are required to comply with the general provisions of the Code of Commerce, either for single individuals or for any of the various kinds of companies recognized by Venezuelan law. These provisions and requisites are as follows: For an individual it will suffice to register at the commercial court, and for a private firm consisting of more than one individual a copy of the contract between the partners and also an extract or summary of the same must be filed with the registry of commerce, together with the names of the partners and the title of the firm. In the case of a simple partnership of shareholders, the acting partners must register the company, stating that there is a silent partnership and giving the amount of the capital paid up or to be paid up. In the case of a stock company or a silent partnership of shareholders the managers, within 10 days after the first session of the founders or organizers ("constitutive assembly") should make a declaration before the commerce court stating that all requirements have been complied with for the organization of the company. To such declarations there must be attached a complete list of the shareholders, a statement of the paid-up capital, a copy of the acts of the assembly, and a copy of the by-laws. This declaration must be published in the local papers within the same period of 10 days.

But if the bank is established abroad and the purpose is to operate in, or establish branches in, Venezuela, the necessary distinction should be made; that is, if it is not a stock company or silent partnership of shareholders, the provisions of the Commercial Code should be complied with; if it is a silent partnership or stock company, the company should be registered in the registry of commerce of the place in which the agency, branch, or business is established, and publication should be made in the local press of the charter and other documents necessary for the establishment of the company, according to the laws of the country of origin; also, a legalized copy of such articles of the law as are applicable in Venezuela, and a copy of the company's by-laws, must be filed with the registry of commerce. Any future modification of a contract or of the by-laws is subject to the same requirement. These companies should have in Venezuela a representative duly authorized and empowered, within the terms of the contract (or concession) and the titles of the company. (Arts. 294 to 296 of the Commercial Code.)

If the company is formed or incorporated in a foreign country, but its principal object is to operate in Venezuela, all the formalities above mentioned should be complied with, and the company will, for all

purposes and effects, be considered a native institution. This is according to the law of June 4, 1918.

BANKS OF ISSUE.

The banks of issue must be "constituted" in Venezuela, in accordance with the Venezuelan laws, and must have their principal offices in Venezuela. Their capital must be in legal gold coin. They must file with the Ministry of Fomento (Development) a complete copy of their charter, of the entry made at the registry of commerce, and of the constitutive documents of the bank. The entry made at the registry of commerce must include a statement as to the character of the bank, its name, its capital, the commercial lines it will exploit, its address and legal domicile, and a certified copy of its by-laws, which must be approved first by the Federal Executive.

Since authority to issue bank notes is granted only by the Government, the Federal Executive will determine, after the by-laws are approved and the other documents examined, whether or not it will grant the necessary licenses to issue bank notes and, if it will, the date of issue and all other details concerning them.

After the bank is duly constituted and the licenses to issue bank notes have been granted, there will be applied the other provisions of the law pertaining to the function or operation of the bank.

The provisions referred to in the last three of the foregoing paragraphs are contained in the law of June 4, 1918.

In conclusion, banks of issue must perform the following essential acts:

1. Lodge with the Department of Public Control within 15 days following that of their formation (with an extension of time up to 15 days further, according to the distance of the place of the registration office) a full and duly authenticated copy of the contract of association, if there should be one, together with the note made in the public registry of such contract, in which there must be set forth: (a) The name assumed by the bank; (b) the capital thereof; (c) the method and periods in which said capital must be paid up; (d) the object which the institution proposes; (e) the place of its registered office; (f) its duration.

2. Lodge also with the Department of Public Control, within the same period, a copy of the regulations of the bank, in which there must be set forth with the utmost clearness its internal system of control and the conditions of its operation.

3. Remit to the Department of Public Control within 30 days following, and advertise in the press, the balance sheet of each month, extracted from its books, in which there must appear the total amount of notes in circulation and those in the coffers of the bank, the total of the deposits, and that of the negotiable securities in hand which are regarded as realizable at maturity; that of those overdue, of those not capable of realization, and of those carried to a separate account; the amount of the advances to directors, managers, and other agents of the bank; and, finally, that of the obligations of the bank.

The bank is also bound to declare, to the Department of Public Control, the number of branches it founds, with a statement of the capital allocated to them for their operations and of the place of their business.

When the essentials laid down in paragraph 1 of this article have been fulfilled, the Federal Executive will authorize the establishment of the bank.

MORTGAGE AND REAL ESTATE BANKS.

Mortgage and real estate banks operate in accordance with special laws, and as no special law has been promulgated, the formalities of the organization of such bank have not been provided for. Officials of the Ministries of Finance and Fomento (Development) have stated that mortgage and real estate banks are subject to the provisions of the Commercial Code and of the law of June 4, 1918, above mentioned.

RECENT BANKING LEGISLATION.

A new law on banking was published in Caracas on June 26, 1920, having to do principally with the Government control of the Bank of Venezuela. Commissions for services as the fiscal agent of the Government were fixed at 1½ per cent for 1920, then 1½ per cent for the following year, and 1 per cent for eight years thereafter. The bank was accorded postal and telegraph franks by the Government for official business pertaining to the collection and handling of Government funds, etc.

During this same session of Congress a new banking law referring to foreign banks and their branches went to the second reading, but is now in suspension. This proposed new law, never published, may be said to have been copied from the Federal reserve act of the United States. A strong protest was made by the foreign banks, their objections having to do principally with the provisions of the proposed law which prohibited the investment by the foreign banks of their surplus out of the country.

TARIFF SYSTEM AND REGULATIONS ON IMPORT TRADE.

GENERAL CHARACTER AND PURPOSE OF TARIFF SYSTEM.

While serving as an important source of governmental revenue, the tariff system of Venezuela has for a partial purpose the encouragement and protection of domestic agriculture and industry. On manufactured goods the import duties are highly protective, and under them such domestic factories as have been established can operate at a profit in competition with foreign-made imported articles, despite the fact that all machinery and equipment and most of the raw materials have to be imported at great expense. Thus, the importation of shoes, ready-made clothing, laundry soap, matches, horseshoes, trunks and furniture is so heavily taxed as to be commercially impossible. Sea salt and saccharin and similar sugar substitutes are expressly forbidden, while the manufacture of matches is a Government monopoly, and the importation of war materials, apparatus for coining money, silver, nickel, and copper coins, and cigarette paper is reserved to the National Government.

ARTICLES ADMITTED FREE OF DUTY.

On the other hand, the tariff system is designed to encourage national development along broad lines by exempting from import duties agricultural machines and tools; equipment for sugar mills; certain machinery for mining, foundries, and textile mills; heavy chemicals, disinfectants, and fertilizers; printing presses, type, and paper for scientific publications and for public instruction; certain classes of lumber; and even common bags, when intended for the reexportation of certain native products. To encourage the development of the oil resources of the country, automobile trailers and usual accessories, much in demand for the use of employees of petroleum development companies, have, by decree of September 17, 1921, been transferred to a low-duty class.

The full list of articles that may be imported into Venezuela free of import duty is as follows:

Carbolic acid; arsenic, sulphur, carbolineum, creoline, and similar disinfectants, chloro-naphtholeum, sodic crisodol, calcium chloride, eucalyptus (liquid), phenoline, formaldehyde, calcium hypochlorite, hyco, corrosive sublimate, copper sulphate, ferrous sulphate, sulphur candles, zenoleum, and other liquids, pastes, balls, and powders used to exterminate insects, mice, and rats.

Sulphuric acid.

Barbed wire for fences, iron wire netting with meshes at least 3 centimeters (1.18 inches) each way; other iron wire netting for fencing and iron staples not less than 2½ centimeters (0.98 inch) wide, made of wire exceeding 3 millimeters (0.12 inch) in diameter.

Live animals.

Disinfecting apparatus of all kinds.

Apparatus for exterminating insects and charges therefor.

Coffins containing bodies and urns with ashes.

Coal and carbons for electric arc lights.

Calcium carbide.

Catalogues.

Roman cement.

Wood ashes.

388 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

Ice, when imported through ports where there are no factories for the manufacture of ice or where the ice factories are not in operation.

Refractory bricks, earth, sand, and stone.

Latrines and urinals with their accessories.

Copy books, pamphlets, and schoolbooks, and Spanish dictionaries.

Books, bound or unbound, treating of sciences, arts, and trades, including Spanish dictionaries.

Haffkine's vaccine; Yersin's serum.

Machinery for mining and foundries and textile machinery, not otherwise specified.

Windmills and repair parts and machines for drilling artesian wells.

Small samples of fabrics, of wall paper in pieces not over 50 centimeters (19.7 inches) long, and of other goods, provided they are not salable. (Samples in excess of 25 kilos will be assessed at the rate of 0.25 bolivar per kilo.)

Gold coin of legal currency.

Grape skins; yeast, alcoholic, of all kinds.

Live plants, bulbs, and tubers not specified, for agricultural purposes.

Printing presses and type, leads, and other metal articles for printing; prepared ink, including that used in lithography; heavy paper for making matrices, and the alloy of lead and aluminum (type metal) used for printing by the stereotype process.

Bridges, together with chains, flooring, and component parts, when imported by agricultural enterprises.

Quinine of the following formulæ:

Quinine sulphate $(C_{20}H_{24}N_2O_8)SO_4H_2 + 7H_2O$.

Quinine bisulphate, $C_{20}H_{24}N_2O_8 \cdot SO_4H_2 + 7H_2O$.

Quinine hydrobromide, $C_{20}H_{24}N_2O_8 \cdot HBr + H_2O$.

Quinine hydrochloride, $C_{20}H_{24}N_2O_8 \cdot HCl + 2H_2O$.

Quinine bihydrochloride, $C_{20}H_{24}N_2O_8 \cdot 2HCl$.

Quinine valerianate, $C_{20}H_{24}N_2O_8 \cdot C_8H_{10}O_2 + 12H_2O$.

Quinine hydrochlorosulphate $(C_{20}H_{24}N_2O_8)2HCl \cdot SO_4H_2 + 3H_2O$.

Common secondhand bags, imported to be used for the exportation of man-grove bark, mother-of-pearl shell, and divi-divi, provided the importer prove the reexportation of these bags. The customs authorities will require the importers to give security for the amount of the duty on the bags for a period not exceeding six months.

Natural Stassfurt salts, Chile saltpeter (for agricultural uses as a fertilizer), ammonium sulphate, potassium sulphate, acid phosphates, and substances not specified, of animal, vegetable, mineral, or composite origin, which are suitable for use only as fertilizers.

Beams of pine or pitch pine exceeding 25 centimeters (about 1 inch) in thickness.

Rat and mouse traps.

The following machines and implements for agricultural use: Stump pullers; plows and plowshares; fanning mills, sorters, shellers, pulpers, washers, polishers, rakes, driers, separators, and hullers, for the treatment of coffee; hoes, mattocks, bush knives (calabozos), trowels, shovels, weed hooks, axes, iron shovels, picks, pruning knives and shears of all kinds, and machetes for clearing the ground, with or without wooden handles; fanning mills; coconut shellers; grain hullers; fiber strippers; shellers; cotton gins; weeders; manure spreaders; manure forks and sickles; sprayers, automatic, for watering and disinfecting; hydraulic baling presses (prensas para empacar); oil presses; scrapers for stripping henequen, pita, and similar fibers; rakes and similar tools; rollers and clod crushers of all kinds; driers for the treatment of cacao; reapers and harvesters; seeders; haversacks; and repair parts.

Personal effects brought in by foreign diplomatic officials and by national envoys upon their return, subject to compliance with the legal formalities.

Passengers' baggage, excepting new articles and furniture, which shall be dutiable, even if used, according to the proper tariff classification, with a reduction in proportion to depreciation caused by use.

NOTE.—The import duties on new articles imported as baggage shall be subject to a surtax of 20 per cent, and to an additional surtax of 30 per cent if imported from the West Indies.

Apparatus for purifying, clarifying, evaporating, and granulating sugar; brass pumps for cane juice; pumps for molasses; sugar carts; centrifugal machines; sugar-cane carriers with their iron and wood fittings; copper, brass, or iron evaporating pans for cane juice; bagasse burners and grating; bagasse driers;

steel tanks with conical bottoms for cane juice; steel tanks for purified cane juice and for cane juice sirup (melado); cylindrical steel tanks for hot water, tanks with strainers for cane juice; tanks for molasses; sugar mills and spare parts; steam pipes and other articles, including buildings and railway material, imported for the establishment of sugar centrals. Small iron posts for fences.

White printing paper, neither sized nor glazed, intended exclusively for printing of periodicals or books of a scientific nature or for public instruction.

Cloth-covered cork life-preservers.

Raw cotton.

Sulphide of carbon.

Eleven-inch paper strips for monotype printing presses.

Wire covers for food.

Flytraps.

Paper and ribbon for catching flies.

Wooden type boxes.

Composing frames.

Common machetes.

Rice polishers.

TREATMENT OF IMPORTS FROM VARIOUS COUNTRIES.

Venezuela has a single-tariff system, the rates of which are now applied equally to imports from all countries except those from the West Indies, which are subject to an additional surtax of 30 per cent of the import duty, in accordance with the law of June 4, 1881. This tax is imposed to bring about the establishment of wholesale houses in Venezuela and to protect Venezuelan merchants from the competition of stocks of merchandise maintained in some of the West Indian islands, such as Trinidad and Curacao.

The Executive is authorized to increase up to 25 per cent the import duties on goods from foreign countries which do not provide in their treaties with Venezuela for most-favored-nation treatment. Venezuelan products are now accorded most-favored-nation treatment in the United States.

TRANSLATIONS OF TARIFF LAW AVAILABLE.

The customs tariff law under which imports into Venezuela are now assessed has been in effect since June, 1915, the changes since that time having provided mainly for minor increases or decreases in duty on specific articles or having been merely changes as to the classification of particular goods.

An English translation of "The Customs Tariff of Venezuela" was published by the United States Bureau of Foreign and Domestic Commerce in 1916 (Tariff Series No. 33), which shows the full schedule of import duties in dollars and cents per 100 pounds, as well as in bolivars and kilos, the Venezuelan units of value and weight. It may be obtained for the nominal sum of 15 cents from the Superintendent of Documents, Government Printing Office, Washington, D. C., or from any of the district or cooperative offices of the Bureau of Foreign and Domestic Commerce. The minor subsequent changes have been published from time to time in Commerce Reports and may be learned by application to the Bureau's Division of Foreign Tariffs at Washington, D. C.

Late in 1920 the Minister of Foreign Relations, Commercial and Industrial Bureau, of the Venezuelan Government, completed a new English translation of the tariff, which includes all changes and new

rulings up to June 30, 1920. This translation is to be published and distributed in the United States through the office of the Venezuelan commercial agent, whose headquarters are in New York City.

The same bureau of the Venezuelan Ministry of Foreign Relations is also preparing translations of other pertinent laws of Venezuela, such as the customs regulations governing masters of vessels, the rules for preparation of invoices and shipping documents, pure-food law, etc. These will be distributed in the United States through the same agencies.

METHOD OF IMPOSITION OF IMPORT DUTIES.

CLASSIFICATION OF GOODS FOR DUTY PURPOSES.

The classification of dutiable goods under the present tariff law is based upon the character of the articles or their component materials.

The rates of duty in the Venezuelan tariff are arranged according to a schedule of 9 classes, with rates ranging from 0.05 bolivar (about \$0.01) per kilo gross for the first class, to 20 bolivars (\$3.86) per kilo gross for the ninth class. In addition to the rates provided for by the schedule, some articles are subject to specific or ad valorem surtaxes, which presumably are intended to make the schedule more elastic and are applied in many instances to cover variations in quality or admixtures of component materials of a higher grade. These surtaxes should be distinguished from the general surtaxes amounting to 56.55 per cent of the duty, later described, which apply to all imports into Venezuela.

DUTIABLE WEIGHT.

Imports into Venezuela are dutiable on gross weight, i. e., inclusive of the weight of the containers. In case the containers consist of articles specified in the tariff under a higher tariff classification than the contents, such as trunks, valises, traveling bags, etc., they are assessed for duty under their own classification. In the case of goods dutiable under the first class of the tariff only containers and packing consisting of bagging, oilcloth, iron, zinc, or lead, or barrels or cases of wood, iron, zinc, or lead, are admitted at the rate applied to the contents, while other containers are assessed for duty under their own tariff classifications.¹

SURTAXES.

All dutiable imports into Venezuela are subject to the following surtaxes:

Two surtaxes of 12½ per cent of the duty each, authorized by the decree of April 25, 1901, and known, respectively, as the national tax (Impuesto Nacional) and the territorial tax (Impuesto Territorial).

¹ If goods, ordinarily imported from European countries in containers of wood, iron, zinc, or lead, are imported from the West Indies without any containers, or in bales or cartons, they are subject to a surtax of 20 per cent of the duty. When goods ordinarily imported from European countries packed in hemp cloth and oilcloth and reenforced with ties or hoops are imported from the West Indies packed merely in hemp cloth, they are subject to a surtax of 10 per cent of the duty.

A surtax of 30 per cent of the duty, established by the decree of February 16, 1903, for the purpose of paying off the foreign indebtedness and continued by the resolution of June 4, 1912, to be used for internal improvements.

A surtax of 1 per cent, based on the duty increased by the other surtaxes, imposed by the decree of December 29, 1910, and known as a sanitation tax (Impuesto de Sanidad).

In addition to the above there are a number of surtaxes, specific or ad valorem, prescribed by the tariff for specified articles.

DUTIABLE VALUE.

While most rates of duty into Venezuela are specific in amount, the surtaxes prescribed for specified articles are often ad valorem in form—that is, so much per kilo, plus such a per cent of value. In the computation of these ad valorem duties it is provided by an executive decree of November 19, 1920, that the consignees shall convert the values given in the consular invoices into bolivars at the rate current on the date of arrival of the shipment, instead of on the fixed gold basis (of 19.3 cents per bolivar) as was formerly the practice. Because of the premium on the dollar, this change has affected unfavorably such imports from the United States as are subject to ad valorem rates, as compared with those from European countries.

EXAMPLES OF CALCULATION OF DUTIES.

The following illustration will show the methods of calculating duty on imports into Venezuela:

Articles and duty.	Bolivars per 100 kilos.	
	From all countries except West Indies.	From West Indies.
CARDBOARD.		
Duty (0.10 bolivar per kilo).....	10.00	10.00
Surtax of 55 per cent of duty (30 per cent plus 12½ per cent plus 12½ per cent).....	5.50	5.50
Special surtax of 30 per cent on imports from West Indies.....		3.00
Sanitation tax of 1 per cent of duty increased by other surtaxes.....	.155	.185
Total.....	15.655	18.685
PRINTING PAPER.		
Duty (0.10 bolivar per kilo plus 25 per cent of duty).....	12.50	12.50
Surtax of 55 per cent.....	6.875	6.875
Special surtax of 30 per cent on imports from West Indies.....		3.75
Sanitation tax of 1 per cent of duty increased by other surtaxes.....	.196	.231
Total.....	19.571	23.356
WALL PAPER.		
Duty (0.75 bolivar per kilo plus 10 per cent ad valorem).....	75.00+10%	75.00+10%
Surtax of 55 per cent of duty.....	41.25+ 5.5%	41.25+ 5.5%
Special surtax of 30 per cent on imports from West Indies.....		22.50+ 3%
Sanitation tax of 1 per cent of duty increased by other surtaxes.....	1.16+ .185%	1.39+ .185%
Total.....	117.41+15.655%	140.14+18.685%

It should be noted that the above amounts do not include certain expenses incidental to the delivery of imported goods after arrival at Venezuelan ports, such as port charges, wharfage dues, and warehouse charges.

SPECIAL REGULATIONS ON CERTAIN IMPORTS.

In the case of certain articles, such as explosives, certain prepared foods, and pharmaceutical preparations, there are special restrictions in regard to importation, inspection, or sale which must be complied with.

EXPLOSIVES AND FIREARMS.

According to the decree of June 4, 1914, the importation of explosives, with the exception of ordinary gunpowder, is subject to a permit which may be granted as a result of an application through the Ministry of the Interior. Explosives must be stored in warehouses designated by the Ministry of War and Marine, and their use by the importer is under the control of the authorities by whom the importation has been authorized. The importation and sale of dynamite has been restricted by the decree of June 27, 1913, to the National Government operating through the Department of Public Works.

Firearms may be shipped only by special permit from the Government of Venezuela.

PURE-FOOD REGULATIONS.

The pure-food regulations of Venezuela prohibit the manufacture and sale of food products injurious to health and require that adulterated and imitation products be plainly labeled as such, both on the immediate container and outer packing, and that their component substances be specified. Such labels must be in Spanish, with translations into such other languages as may be desired. Besides regulating the marking of foodstuffs, the law establishes standards of purity for a number of alimentary products, including farinaceous foodstuffs, milk and milk preparations, and dairy products. In addition, detailed requirements are prescribed for alcoholic beverages, and the necessity of plainly indicating their actual ingredients and place of origin is emphasized.

It may be of interest to note in this connection that the rates of duty prescribed by the tariff for oleomargarine and other butter substitutes are considerably higher than the import duty on butter.

All shipments of foodstuffs should bear a Government stamp of inspection or be accompanied by a sworn statement that the goods have been inspected by competent authority.

PHARMACEUTICAL PRODUCTS.

An executive decree, issued on January 18, 1921, by the Venezuelan Government, provides regulations for the practice of pharmacy in accordance with the provisions of article 17 of the pharmacy law of June 14, 1920. Articles 80 to 90 of these regulations prescribe minute details of the requirements for the analysis, registration, and labeling of pharmaceutical specialties, with fines for failure to conform to the provisions of the regulations. The preparations

authorized by the Central Bureau of Public Health before the promulgation of the present regulations were required to comply with the regulations within six months after the date of the decree. After three months from the promulgation of the decree importation of preparations not previously authorized by the Director of National Sanitation was prohibited.

Articles 92 to 104 regulate the importation and sale of all vaccines and serums. All such products are required to conform to specified regulations for registration and labeling. When documentary evidence that the product has been manufactured under Government supervision in the country of origin is not furnished, analysis is required at the expense of the importer, who must furnish samples and all material for analysis.²

SANITARY PREPARATIONS AND EQUIPMENT.

Article 2, No. 1, of the Venezuelan customs tariff, 1915, provides for the importation, free of duty, of a number of sanitary and disinfectant chemicals and preparations, sanitary appliances, etc., the intent of the law being to stimulate the importation of such articles, including insect and vermin exterminators, etc. In a number of cases (Nos. 1 to 41, inclusive, of the tariff) special formulas and articles are cited as being placed on this free list.

American manufacturers of such articles and substances who are interested in increasing their trade with Venezuela should endeavor to have their goods placed on this free list. This can be accomplished by presenting to the Ministry of Hacienda a solicitation which should contain a description of the article or preparation, its effect and uses, etc. This application is referred to the National Sanitary Department for verification, upon which the Ministry of Hacienda allows the free importation of the goods in question. Duplicate samples of the preparations must be sent with the solicitation, which can be made by the resident agent of the company, or by an attorney of Caracas, acting for the company. The cost is 50 bolivars (\$9.65) for each item. Various items can be included by one firm in the same solicitation.

INTERNAL TAXES ON TOBACCO AND LIQUORS.

The internal tax on cigarettes provided for by the law of June 12, 1915, is 5 bolivars per kilo.

The internal revenue law of June 12, 1915, prescribes the following internal taxes for imported liquors:

Brandy and rum, 1.25 bolivars per liter; gin, bitters, anisette, and the like, 1.50 bolivars per liter; and cognac, whisky, etc., 250 bolivars per liter. For liquors of an alcoholic strength exceeding 50° the tax is increased proportionately. The tax on imported beer is 0.30 bolivar per liter. The tax on imported liquors is collected at the same time as the import duties. If liquor upon which the internal tax has been paid is exported or used in the manufacture of denatured alcohol, a refund of the taxes will be made upon compliance with the rules prescribed.

² The text of this law and regulations under it is on file in the Bureau of Foreign and Domestic Commerce, and specific information can be obtained upon request.

SHIPPING INSTRUCTIONS AND CUSTOMS REGULATIONS.

CONSULAR-INVOICE REGULATIONS AND FEES.

Consular invoices in the Spanish language are required, and in making them out great care should be exercised, as goods must be invoiced precisely in the language of the tariff law. Fines are imposed very often for the use of ditto marks, abbreviations, interlineations, leaving lines blank, or other errors. If goods are declared in a class lower than that in which they rightly belong, the goods are confiscated. Consignees should prescribe the exact wording for invoice declarations, and the shippers should never vary from this nor venture to substitute any goods. Many firms have lost shipments because on arrival they were found to be of different weight from the sample upon which the classification was based.

Shippers of merchandise to Venezuela must present to the Venezuelan consul for certification four copies of the consular invoice, which should contain the following data: The names of the shipper and the consignee, the port of shipment, the port of destination, the kind of vessel, its name, nationality, and the name of its captain; the mark, number, kind, and destination of each package, its contents, exact gross weight in kilos, and its value. The contents must be declared by designating the name of each kind of merchandise, without abbreviations or the use of ditto marks, mentioning the component material and the quality or circumstance which distinguishes it from other merchandise of the same name specified in the tariff under a different classification. In the case of shipments from foreign colonies, the tariff class must also be indicated in the invoice.

If the shippers are not acquainted with the Spanish language, the consular officer must translate the invoice, making three extra copies of the translation. When the original invoice does not exceed 30 hand-written lines, the charge will be \$3 gold for the four copies of the translation; a charge of 3 cents will be made for each additional line.

The regular fee for the certification of a consular invoice is fixed at 1 per cent of the invoice value of the shipment, with a minimum charge of 5 bolivars (\$0.965).

A copy of the consular invoice of Venezuela is given below:

FACTURA CONSULAR DE VENEZUELA.

Consular invoice of Venezuela.

Factura de mercaderías embarcadas en este puerto por _____, a bordo del
 Invoice of goods shipped from this port by _____ on board the
 vapor _____, de nacionalidad _____, su capitán _____, con destino a _____
 steamer nationality captain destined for
 y a la consignación de _____.
 and consigned to

Bultos. Packages.					Contendio. Contents.	Peso bruto. Gross weight.		Valor. Value.
Marcas. Marks.	Numera- ción. Numbers.	Cantidad en cifras. Quantity in figures.	Cantidad en letras. Quantity in writing.	Clase de bultos. Kind of packages.		Kilo- gramos en cifras. Kilos in figures.	Kilo- gramos en letras. Kilos in writing.	

The following declaration, at the bottom of the invoice, must be signed by shippers:

Bajo juramento, declaramos que los valores anotados en esta factura son verdaderos.
Under oath we declare that the values given in this invoice are correct.

It is advisable to present consular invoices for certification not later than the day previous to the sailing of the vessels. As a result of a report by the consuls that shippers often present their invoices for certification at the last moment, leaving the consul insufficient time for their examination and for insertion of the required data, a ruling has been made that when invoices are presented at the consulate shortly before the departure of the vessel, the consul must notify the shippers of the penalties to which the consignees will be subjected for incomplete data. If the shippers insist on forwarding the invoices on their own responsibility, the consul will write at the bottom of the invoice: "Advertencia. No revisada por haber sido presentada 2 horas antes de la salida del buque." (Warning. Not verified, because presented two hours before sailing of vessel.)

When, after a consular invoice has been certified, a change is to be made on account of short shipment or other circumstances, the consul will write a note at the bottom of the invoice (not in the body), stating the circumstances, and will sign the note.

WARNINGS FOR PREPARATION OF SHIPMENTS AND DOCUMENTS.

Articles belonging to two or more tariff classes should not be packed in the same case, for when so packed the entire contents of the case will be dutiable at the rate applicable to the article under the highest classification.

Packages may be marked with either stencil or brush. Weights need not be shown on packages.

Packages having the same contents, size, weight, and form, such as bags, cases, barrels, kits, etc., of cereals, soap, chinaware, macaroni, candles, and similar merchandise, marked with the same numbers of marks, may be included in one item.

Packages with different marks may be included in one invoice, but merchandise for different ports must not be included in the same invoice.

Great care should be exercised in making out invoices, as the customs authorities in Venezuela impose fines for slight irregularities. The following should be kept in mind:

Every article must be properly and explicitly described in the invoice in the language of the tariff law. If an article is known by various names in different countries, the exporter should satisfy himself as to its Venezuelan designation.

If an article is called by a name applied to goods of a class lower than the Venezuelan classification, the article is liable to confiscation as contraband.

If an article is misnamed, and because of this misnaming is placed in a class higher than its proper classification, the importer must pay the duty of the higher class.

If the name given in the invoice is not specific, the importer must pay a fine equal to double the duty on the article. Thus, "wine" is

not considered a sufficiently specific designation of "white wine in bottles of 1 quart each."

The main trouble appears to lie in the low salaries paid to customs employees and the terms of the regulations, which allow the employees 50 per cent of the fines collected or of the proceeds of the goods confiscated by the Government.

This is one of the main reasons why Venezuelan importers prefer terms to cash payment, as, upon any discrepancy resulting in confiscation or fine, they usually abandon the goods promptly to the shipper or his agents, alleging that instructions regarding consular declarations were not followed or that the goods were not in accordance with samples upon which the order was based. The only safe way for American firms to proceed is to require always that the customer specify on the order the manner and exact language of consular declaration, and to have the goods always agree minutely with samples.

In the above connection it is also of interest to note that import duties must be paid on goods appearing on the consular invoices whether the goods are short-shipped or not. Duty is paid on goods lost in transit by the steamship companies, and this is a very prolific cause of complaint on the part of importers, as the steamship company (Red "D" Line) which handles the bulk of the Venezuelan shipments from the United States is protected by the "\$100 limit per package" clause of its bill-of-lading contract. In insuring shipments for Venezuela this fact must be taken into account and the consignee protected for the full "landed" value of the goods, which includes duty paid.

BILLS OF LADING—INSECURITY OF "TO ORDER" SHIPMENTS.

Bills of lading do not require certification; consuls, however, are to certify as many as five copies without charge when so requested by shippers; should more than five copies be desired, a charge may be made for each additional copy.

"To order" shipments, with drafts attached to documents, afford no security of payment in Venezuela, inasmuch as bills of lading have no legal standing, and the customs authorities will deliver goods to the consignee whose name appears on the consular invoice, upon the payment of the duties, without demanding any further proof of ownership. American consular officials in Venezuela have repeatedly warned exporters against unscrupulous persons who make a practice of taking advantage of this feature of the customs procedure to defraud foreign firms of thousands of dollars annually.

To discourage this practice the Venezuelan regulations impose a penalty upon the captain of a vessel carrying "to order" shipments, and goods so consigned are, moreover, subject to a surtax of 25 per cent of the duty.

As a means of obviating the difficulties of "to order" shipments, facilities are available for consignment through a responsible local house, to turn over the merchandise to the consignee upon the payment or acceptance of the draft.

SHIPMENTS BY PARCEL POST.

The postage rate on packages sent by parcel post is 12 cents per pound, or fraction thereof. Every parcel must be packed securely and substantially, but in such a way that it can be opened without damaging the contents or the covering, in order that its contents may be readily examined by postmasters and customs officers. Except for packages to Colombia, the greatest length permissible is 3½ feet and the greatest length and girth combined 6 feet. A parcel not more than 3½ feet in length may measure as much as 2 feet 6 inches in girth, or around its thickest part. A shorter parcel may be thicker. The most convenient mode of measuring is by a tape line 6 feet long. So much of the tape as is not used in measuring the length is the measure of the maximum girth possible. The maximum weight allowed is 5 kilos (1 kilo=2.2046 pounds).

Fundamentally, the parcel post service and importation by this method is under the direct control of the Executive. The Executive decree of September 26, 1918, which contains the most recent legislation governing parcel-post imports, may be summarized as follows:

All merchandise not excluded by the customs tariff may be imported through the parcel post service.

A parcel-post package must not exceed a gross weight of 5 kilos, and its volume will be fixed according to the article.

The package must be conveniently packed and wrapped with solid cloth and must not contain any correspondence. Should any correspondence be found in the parcel, double postage rates will be charged the receiver.

Packages containing gold, silver, or other valuable article should bear a label indicating its contents, with the words "Objetos preciosos," which should be written with letters about 1 centimeter in height.

Each package must be accompanied by a declaration, in quadruplicate, stating the kind of merchandise contained, its class (according to the customs tariff), its net weight, its value, and the other data required by the international conventions. The declaration may be made in any language.

In case a package should not be accompanied by the declaration mentioned, the receiver may obtain the parcel provided he opens it in the presence of the customs authorities and pays a double tax. The receiver will also be required to ask the sender to forward promptly the declaration, and, upon its receipt, he will deliver it to the customs authorities. If within 80 days from the date of receipt of the parcel the declaration is not received, the receiver of the package will be bound to deliver to the customs authorities a copy of his letter requesting the declaration and pay a penalty of 25 to 500 bolivars.

For customs purposes the wrapping of parcel-post packages will be placed in Class III (import duty on gross weight, 0.25 bolivar (4.7 cents) per kilo) when the contents belong to the same or to a higher class. In case the articles contained are free of duty or belong to Class I or II, the wrapping will be classified according to the merchandise contained. In case the package contains articles belonging to different classes (mixed shipment), each article will be weighed separately and will pay according to its class, but a minimum of 100 grams will be fixed for each article—that is, a parcel weighing less than 100 grams will have to pay as if weighing 100 grams. It is understood that the wrapping means merely the cloth and straw or paper used outside of the articles. Bottles, boxes, etc., will be included in the weight of each article.

Goods imported by parcel post will be subject to the same import duties as goods imported in the ordinary manner by freight.

An extra charge of 0.25 bolivar (4.7 cents) will be levied on each parcel-post package, but on parcels imported from the United States of America the charge will be raised to 1.50 bolivars (29 cents).

Parcels not accepted by the receiver will be duly returned to the sender.

When parcels are found to contain articles belonging to a higher class of the tariff than the one declared, or articles of which the importation is prohibited, the importer will be fined according to the customs regulations.

When the declaration does not specify the goods according to the customs tariff, the importer will be subject to a penalty of 15 per cent of the import duty.

In case a parcel is found to have a weight 3 per cent in excess of the weight given in the declaration, the importer will be fined 15 per cent of the duty.

For fuller discussion of the advantages and difficulties of shipments to Venezuela by parcel post, see section on "Parcel-post trade," page 370.

CUSTOMS ENTRY OF IMPORTS.

The importer must present, within four clear days from the date of the official inspection of the vessel, the certified invoice accompanied by two copies of the entry, showing the total number and value of packages, in addition to the data contained in the invoice.

In case the importer refuses to accept the consignment, he must notify the customs authorities to that effect within the time limit allowed for the presentation of the entry. If no person authorized by the shipper or otherwise responsible takes charge of the entry of the shipment within 15 days from the date of the notice by the importer, the shipment is to be considered as abandoned and to be disposed of at public sale. Any amount realized from the sale in excess of the duty and other charges is deposited for a period of six months with the customs authorities and is to be turned over, upon claim and proper identification, to the consignee. If the consignee fails to present a claim within the period of six months, the money is turned over to the National Treasury.

If the certified invoice has been received either by the importer or the customs authorities, and the consignee fails to make an entry within the prescribed period of four days, he is subject to a fine of 100 bolivars (\$19.30) for the first day and of 10 bolivars for each succeeding day. At the end of 60 days the shipment will be considered as abandoned and disposed of accordingly.

In case the importer fails to receive his copy of the certified invoice he may obtain, upon written request, the copy forwarded to the customs authorities, so as to enable him to make out his entry. In such cases the importer must give a written guaranty to present the invoice within the "transmarine period" (i. e., 40 days for shipments from Europe, 20 days from the United States, and 10 days from the West Indies). Failure to present the invoice within the assigned time limit shall subject the importer to a fine of 5 per cent of the duty.

If neither the customs authorities nor the importer have received a copy of the invoice, the goods shall be deposited at the custom-house for a period of 40 days, counting from the expiration of the time limit for the presentation of the entry, and if the invoices are not received within that period, and it is shown by the manifest that the shipper had turned them over to the consul, the Ministry of Finance shall, upon the request of the importer and a report of the proper customs officials, authorize the clearance of the shipment and prescribe the measures to be taken so as to safeguard the interests of the Treasury. A surtax of 10 per cent of the duty is to be levied on such shipments. If no application is made for the clearance of the shipment under the conditions described above within 20 days after the expiration of the 40-day time limit, the shipment shall be considered as abandoned.

In the case of shipments cleared without the presentation of invoices, at least half of the packages constituting the shipment shall be weighed, opened, and examined, and double fines shall be imposed for any discrepancies that may be discovered, provided it is shown by the manifest that the shipper had failed to submit the invoices for certification.

In case of disagreement between the importer and the customs authorities as to the customs classification of the merchandise, the case is to be referred to two experts, one named by the importer and the other by the official in charge of the customhouse. If the customs authorities refuse to abide by the decision of the experts, they may submit the case to the Ministry of Finance, whose decision shall be final.

If the importer is dissatisfied with the liquidation of the shipment, he may appeal to the Ministry of Finance within three days from the time he is notified of the results of the liquidation.

CUSTOMS PENALTIES FOR IRREGULARITIES.

Fines imposed upon importers for failure to comply with the various provisions of the customs regulations are as follows:

For failure to make entry within four days from the time of the inspection of the vessel and upon receipt of invoices by the importer or the customs authorities, 100 bolivars (\$19.30) for the first day and 10 bolivars (\$1.93) for each succeeding day. If the goods are not claimed within a period of 60 days, the shipment is considered as abandoned and disposed of at public sale.

In case of a discrepancy between the various copies of the invoices, whether in regard to number of packages, weight, description, or, in case of exports from the West Indies, in regard to tariff class, a fine of 25 bolivars (\$4.825) is to be imposed for each item showing such discrepancy.

Failure to specify in the invoice the names of the shipper and consignee, ports of shipment and destination, the kind of vessel, its nationality and name, and the name of the captain, is penalized by a fine of 50 bolivars (\$9.65). If the invoices fail to show the mark, destination, number and kind, contents, gross weight in kilos, and value of each package, a fine of from 125 to 1,000 bolivars (\$24.125 to \$193) is to be imposed. No fine, however, is levied in the case of goods invoiced under the free list for failure to specify in the invoice the quality or circumstance that distinguishes them from other merchandise of the same name specified in a different tariff class.

In case of undervaluation, supported by legal proof furnished by the consul, there is to be levied a surtax equal to the percentage of difference between the declared value and the actual value as proved by the consul.

If upon examination the shipment is found to weigh more than is indicated in the invoice, duty shall be levied on the weight ascertained by examination, and if the difference exceeds 5 per cent, there shall be imposed a fine equal to the duty caused by the difference in weight.

If the weight ascertained by examination is less than the declared weight, duty shall be calculated on the basis of the latter, but a dis-

count for leakage may be allowed on certain articles upon application to the Ministry of Finance.

If upon examination it is found that some packages contain goods of a higher tariff classification than that declared in the entry, the duty shall be levied on the basis of the highest class as ascertained by examination, and the goods incorrectly declared shall be considered as contraband.

If the examination shows that some packages contain goods subject to a lower classification than that declared in the entry, duty shall be collected according to the classification given in the entry.

In case the difference in weight or in designation resulting in a higher tariff classification affects more than two packages of those included in one invoice, there shall be imposed, in addition to the fines on each package, a surtax of 25 per cent of the total amount of such fines.

APPEALS POSSIBLE AGAINST CERTAIN CUSTOMS PENALTIES.

The fines and surcharges established by Venezuelan law are to be levied and enforced by the chief of customs, but interested parties are allowed the right of appeal before the Minister of the Treasury. Inasmuch as the provision of the law respecting goods declared to be contraband are subject to judgment by the tribunals, which may or may not sustain the judgment of the customs authorities, the latter must therefore look to the tribunals for such judgment to become binding.

The judgment of the Minister of the Treasury will be sought by the customs authorities only in the following cases:

- (1) When such judgment is specified by law.
- (2) When the questions involved are not provided for by law or by subsequent resolutions.
- (3) When the merchandise involved is not specified in any tariff classification or in any subsequent resolutions of the ministry.

NEED FOR GREATER CARE BY AMERICAN EXPORTERS.

When considering the problem of the difficulties of exporting to Venezuela, the shipper must bear in mind that his customer is not to blame in any way for the more or less stringent regulations in force in his country; that it is greatly to his interest to import goods at as low a rate of duty as possible; and that careful attention to detail and to instructions on the part of the exporter will go a very long way toward securing a permanent customer for his house, since most Venezuelan importers would rather pay a slightly higher price to an old and tried house than risk the possible consequences in the shape of heavy fines and long disputes with a new house selling at a lower price.

It should also be borne in mind that the above observation applies in greater or less degree to all of the Latin American countries. The British and German houses which have exported for many years to Latin America fully understood these fine points of the trade, having made an exact study in minute detail of all the special requirements of each country. During the scramble for trade following the war, the traveler in Latin America heard on every side numerous com-

plaints founded on the general lack of care and attention on the part of the American exporter, and unfavorable comparisons were made, the importers being long used to the exact system of their old European firms.

Textiles, principally cotton manufactures, being the largest item of importation into Venezuela, and the customs-tariff classification of textiles being based on the weight per square meter of the goods and the number of threads contained in a square of 5 millimeters, importers are constantly troubled by mistaken classification of goods, because shipments do not agree exactly with the samples on which the order was based and the classification directed by the purchaser. As a rule, the first intimation of such discrepancy is the receipt of notification of a heavy fine imposed by the customs authorities. Importers usually pay these fines and look to the exporter for reimbursement. American exporters can not be too careful in this regard when making shipments to Venezuela. The same rule applies also to shipments of goods of mixed materials, such as silk and cotton mixtures. The content of raw silk, called "animal" silk in the Venezuelan tariff, must be carefully determined and exactly stated in the declaration.

The above is the principal reason why Venezuelan importers of textiles refuse to pay cash before or upon shipment, and also why export commission houses hold such a large portion of the trade in this line.

The same remarks apply to substitution of merchandise, even when an article or material of greater value or better quality than that ordered is sent. The only safe procedure in case substitution or change in the order is necessary for the exporter is to communicate first with the customer in Venezuela and secure his permission for such change and his instructions regarding the new declaration of the goods in the consular invoice.

COMMERCIAL TRAVELERS' REGULATIONS.

Commercial travelers coming to Venezuela are not required by law to bring any documents other than a passport viséed by the Venezuelan consul at the port of departure, which is required of all travelers.

A power of attorney is not necessary. It may be advisable, however, as tending to inspire confidence on the part of buyers, but is not required by any legal authority.

The commercial traveler may begin soliciting business as soon as he is permitted to land. No officially certified papers, official licenses, warrants, or permits to do business are required. His clientele is not limited.

CUSTOMS TREATMENT OF SAMPLES AND ADVERTISING MATTER.

Samples of no commercial value, such as small pieces of fabrics and wall paper not exceeding 50 centimeters (19.7 inches) in length, are admitted free of duty to an amount of 25 kilos (55 pounds). Samples of fabrics in excess of that amount are dutiable at \$3.43 per 100 pounds gross weight.

On samples admitted free of duty a bond is required guaranteeing their reexportation within one year. If duties have actually been

paid they can not be refunded. Duties are collected upon any portion of samples not reexported within the time specified.

Samples may be reexported through any port of the Republic, but the traveler must present the bill of lading of the coasting steamer ("poliza de cabotaje") on which the samples have been sent to the customhouse where exportation is to be made, and the items must agree exactly with the samples presented by the traveler and with the list of samples as made out upon their entry. The "poliza de cabotaje" must be obtained when the traveler gives the original bond. It should be carefully preserved.

As a rule, when samples are brought as baggage they can be cleared within a few hours. Samples having no commercial value can be cleared without difficulty, but a customs broker will be able to expedite the clearance of samples having a definite value.

Catalogues, as such, are free of duty. Printed matter used for advertising purposes, such as pamphlets, calendars mounted on lithographed boards, etc., must pay a duty of \$1.37 per 100 pounds gross weight. Advertising matter with lithographed or printed designs bearing no advertisements (printed matter) pays a duty of \$17.13 per 100 pounds gross weight.

To avoid excess baggage charges it is desirable to send baggage from La Guaira to Caracas by freight, which costs \$0.58 per 100 kilos (\$0.26 per 100 pounds). If carried as excess baggage it costs \$1.93 per 100 kilos (\$0.875 per 100 pounds).

COMMERCIAL PRACTICES AND REQUIREMENTS.

SLIGHT SPECIALIZATION IN MERCHANDISING—TENDENCY TOWARD MODERN METHODS.

Except in the drug and chemical trade, there is very little specialization in merchandising in Venezuela; all the larger stores carry a general, miscellaneous assortment of goods, the principal line being, of course, cotton manufactures. However, in Caracas, there are now a few stores specializing in men's clothing and haberdashery, a few specializing in wall paper, paints, oils, and glass, and one or two stores that handle and stock hardware exclusively. This is not true of the other larger towns of the country. As a rule, the larger firms do both a retail and a wholesale business—selling at wholesale in the interior; handling, either on consignment or by direct purchase (usually secured through crop advances), the bulk of the coffee and cacao crops; and also buying and exporting hides and skins and the other products of the country. A few of the larger firms have recently adopted a system of partial segregation of departments, lines such as hardware being handled separately, but under the same firm name and nearly always in the same building.

The general tendency of the country is toward more modern and up-to-date methods. Stores advertise liberally in the local papers; new, large show windows are being installed; show cases are being put in for the better and more attractive display of goods offered for sale; and better interior lighting is being provided. The stores of Caracas, Valencia, Puerto Cabello, and Maracaibo present a very attractive appearance, and several new, modern concrete buildings are being erected by the larger firms. Street lighting is being adopted also, and many fine electric signs are seen at night in Caracas.

SERVICES OF EXPORT COMMISSION HOUSES.

All the export commission houses maintain either branch offices in the principal cities of Venezuela, with the main office in Caracas (which is the commercial, financial, and political center of the country), or large agencies, which in turn maintain branch offices in the other cities. The advantage is that they have a representative on the ground, constantly in touch with customers and conditions and the needs of the market; differences and disputes are settled personally, and the customer knows that he has care and attention at all times. Prior to the war almost the entire trade of the country was carried on through commission houses, which represented, in many cases, large manufacturers for exclusive lines. The advantage of this system to the manufacturer consisted of the fact that the export commission house paid him cash for the goods shipped on his orders, discounting bills at the bank and running an "open account" in most cases with the Venezuelan customer, for whom exports were also

handled on consignment. This made a very convenient system for the buyer in Venezuela. He had very few accounts running, and his export commission house took care of all his needs, securing and shipping him long lists of miscellaneous merchandise and materials.

Latterly, a number of very large jobbing houses in textiles, drugs and medicines, hardware, etc., have placed their agents in the country, and the English textile trade has long taken care of its Venezuelan business through large jobbing houses, which sent salesmen periodically to the country and neighboring commercial territory. A feature of the trade developments after the war was the increasing number of new American export firms represented in the country by salesmen, and also the increasing effort through personal representation in the country of large jobbing houses and manufacturers.

NECESSITY FOR PERSONAL REPRESENTATION.

Nowhere else does personal representation count for so much in trade as in Latin America. Salesmen and representatives of American firms should be selected with the greatest possible care for personal character and manners, knowledge of the language and customs, and experience and familiarity with the line to be handled.

Great care should be taken in the selection of agents. As a rule, natives acting as agents for manufacturers or jobbers take on too many lines—first, to keep them away from others, and, second, merely in order to have a long list of agencies in their offices. Needless to say, individual lines and those paying a small commission do not get the proper attention and service. A good agent is entirely worthy of his hire and entitled to perhaps a wider margin of commission than elsewhere (as in the United States, Canada, or certain European countries) on account of the general character of Venezuelan business and the exigencies of the trade. A competent agent renders invaluable service in the settlement of disputes and differences—making new customers, holding old ones, watching the market and economic conditions, and in general building up the trade of his principals. An agent without proper qualifications can do a proportionate amount of harm, and in less time.

Many complaints have been registered regarding the general treatment of agents by American firms in the past. In Venezuela a letter of appointment is looked upon as equivalent to an agency contract, such view being upheld by the law, and an agency so given can not be canceled by mere verbal or written notice unless there is an express provision to that effect in the agreement. The general conditions and terms applied to agencies by merchants of Great Britain are usually recognized as standard in Venezuela. The obligation is more binding than is generally considered the case in the United States, and any small offense against the sacredness of the agreement does a great deal of harm, as the matter is soon common knowledge in the small centers of the country.

TERRITORY OF AGENTS.

While firms resident in Caracas compete with the importers of Puerto Cabello, Valencia, Maracaibo, and Ciudad Bolivar by means of branch houses and resident subagents, and also through traveling

salesmen, sent out periodically according to the buying seasons, an American firm contemplating the giving of agencies in Venezuela should, by all means, be first assured of the ability of the prospective agent or agency firm to cover properly the territory of the country. Otherwise, it is better practice to allow one agency for Caracas, another for Maracaibo, and another for Ciudad Bolivar. The Caracas agency can easily take care of the Valencia and Puerto Cabello territory, which includes Barquisimeto, if it is at all active and well organized for the business in hand. The growing tendency is for large firms of importers, with headquarters in Caracas, to establish branch houses and stores in the other commercial centers of the country, causing Caracas to become more and more the commercial center of the country and thereby greatly simplifying business so far as territory for sales is concerned.

Several of the largest houses in the country have been built up during and since the war with agencies for American specialties, maintaining branches throughout the country in the principal centers of commerce and trade.

CREDITS.

The consensus of opinion in the United States seems to point toward the general idea that long-term credits are necessary in South America. It is also true that, as a rule, merchants figure on disposing of and collecting for the goods imported before making payment to the foreign shipper, and that buying seasons are from one crop season to another. The older German firms, long established in Venezuela, had built up a large business by their system of protection of the planter, to whom they advanced goods and money, taking payment in products of export, making a balance once a year, and allowing accounts to run over to another season if the last one had proved to be a bad one for the planter.

Another element to be considered is the fact that most of the merchants doing a small retail business and purchasing at wholesale from the larger importers with capital, want to become direct importers as soon as possible; but, not possessing sufficient capital, they must be granted long-term credits, since their customers of the interior pay from one crop season to another. In coffee, which is the chief export product, this means once a year.

In view of the small relative population of Venezuela, its low purchasing power and lack of increase in production, and the fact that there is very active competition in all lines of trade in the country, the better policy would appear to be one of protection of the large importer with sufficient capital to meet his bills promptly on a reasonable credit allowance consistent with the delivery time of shipments from date of invoice. As a matter of fact, the large importing houses, possessing sufficient liquid capital, look upon this capital as their chief advantage over the smaller dealers whom they consider their legitimate wholesale customers, and the American policy of selling to large and small houses alike in the same city and at the same discounts, terms, etc., without consideration of the relative amounts of the bills, has been severely condemned.

It appears that the general policy of the foreign banks has been one of protection of the large importer, letting him take care of

the business of the planter, the trade of the interior, and the local retail trade. Care should be exercised in allowing credit, such operations being based on the general economic conditions of the particular district in question with respect to crop conditions, seasons, etc., and the actual merchandise needs of the tributary population regardless of the demands of the importers for larger stocks of goods. Credit should be allowed only to long and well established firms, who should be permitted to take care of the local retail trade and its credit problems and of the trade with the interior.

Such a policy has the added advantages of greatly simplifying business relations, and also that of eliminating the necessity for long terms on account of the fact that business is being done with firms having sufficient capital to meet the usual terms now in force.

With a weekly freight service from American ports to Venezuela and reasonable delivery service from the factories, and also allowing for delays in dispatch through the Venezuelan customs at port of entry, the terms now in force—namely, from 90 to 120 days' date, or even 90 days' sight—are sufficient and are not objected to by the larger importers who have sufficient capital. On account of the delay in transfer of shipments for Maracaibo at Willemstad, Curaçao, bills for that port might be allowed another 30 days, according to judgment and arrangement, if necessary. The same extension should also be considered for Ciudad Bolívar, as shipments for that port must be transshipped at Port of Spain, Trinidad.

In the past, Venezuelan firms have been very chary about giving out credit information about themselves, and this was very difficult to obtain, for several reasons. Now, however, the establishment of the foreign banks in the country has brought home to the various firms the value of making credit statements from time to time to their bankers, and American firms will have no great difficulty in securing credit information from either of the American banks maintaining branches in Venezuela.

The Banco Mercantil Americano de Caracas (Mercantile Bank of the Americas) has also established the service of receiving shipments¹ at the ports of entry, paying the import duties (which must be paid within 48 hours after receipt of the liquidation by the customhouse), and holding the goods until the customer has either paid for them or accepted the draft, or making such other disposition as may be directed by the shipper. Such consignments are made directly to the bank and in the bank's name; the possession of the shipping documents with draft attached is no protection to the shipper, since the purchaser, or other person whose name appears on the consular invoice, can, upon the payment of the import duties, take the goods out of the customhouse, the Venezuelan law recognizing him as the owner of the shipment. If the purchaser has not a copy of the consular invoice he can easily secure one upon application to the customhouse and the payment of a small fee for the copy. "To order" shipments are unlawful. Steamship companies can not even retain control over cargo for collection of freight after it arrives in port.

FIRST ORDERS—THE GETTING AND HOLDING OF TRADE.

It may be well to state here that it is the usual practice of most Venezuelan and other Latin American importers to give a small

¹ See footnote on p. 168.

order to a salesman representing a house new in the field. This is done with the idea of "trying out" the new house, and the firm will do well to pay the strictest attention to every detail of that first order, which should always go forward perfect in every detail. If mistakes are made in packing, invoicing, consular declaration, or other matters it will take a great deal of hard work to undo the harm done and really establish the firm in the market in competition with older houses known to the trade and experienced in the details. Nothing will go farther toward building up a trade with Latin America than attention to small details.

MEANS TO ATTAIN PROFICIENCY.

Since the export trade of the United States has become a more important factor for the Nation, a great many managers and business executives have taken up the study of these details, but more than this is needed. It is not possible for one man, or even a group of men, in any large export concern or factory organization to supervise personally all the requisite details. The solution lies in a process of general education in foreign-trade methods, especially in the encouragement of study and the acquirement of knowledge by the minor employees who have direct supervision of the details of all shipments.

The office force, shipping force (shipping clerks and packing foremen), and department superintendents should be encouraged to study foreign trade—commercial geography, document technique, commercial laws, etc.—and a "foreign-trade atmosphere" should be created in the country. Courses in foreign trade are now available in many of the colleges and universities of the country, but this is not sufficient. Executives should provide the incentive for study by their employees, who should be assisted to obtain books and other means of education in foreign trade and information regarding the sources of data pertaining to the subject. Several of the largest and most successful banks and exporting houses which maintain branches in foreign countries have established their own schools of foreign trade, and their employees have been obliged to take full advantage of the facilities offered. More education is necessary, the greatest difficulty encountered by banks and export firms being the universal lack of experienced employees to carry on their business. To supply this need, in many cases, foreigners who have the necessary training and experience are employed.

NEGLIGENT FACTORIES.

Great harm to the future of American export trade is being caused by the lack of proper cooperation between the manufacturer and the export house. The export house pays cash for the goods, discounting its bills at the bank and receiving a small commission from the factory for the placing of the order, this commission being taken care of in the export price quoted. Most of the larger export houses are located in New York, as the principal port of shipment to South America and to Europe. On account of the congestion in the port of New York, the high cost of space, and the exorbitant labor and cartage charges, it is not possible nor practical, though it has been tried, for export houses to inspect every shipment arriving at the

port for export for the account of their clients. The mistakes in filling orders, in packing, in substitution of merchandise, etc., get by the export house and cause fines to the importer in Latin America, as well as other extraordinary expenses, unforeseen when the order was placed. The purchaser makes his claim against the export house that has his account; the export house in turn makes its claim against the factory; but there has been an enormous amount of complaint in the United States during the past two years against factories that do not pack properly, that do not follow instructions, and that do not pay claims when they are to blame for trouble with the client of the exporting house. When damage occurs on account of bad packing, theft, or other cause of loss, there are many factories that take their stand upon the contention that the goods were delivered in good condition at the port of shipment (export).

To obviate these difficulties export houses have been making up "black lists" of factories that do not pack properly, or follow instructions, or pay attention to claims against them; and some of the largest houses are threatening to go out of business and only handle goods made by factories that they themselves control.

The smaller factories and plants that can not afford to send their own men to Latin America for trade getting must consider the advantages offered by the export commission house and should take better care in following instructions to the letter, bearing in mind that the export house knows the market where the goods are going and all of its special requirements and details, while the manufacturer usually does not know these and has not taken the trouble to learn them, being confined to the work and problem of production.

PROPER PACKING FOR VENEZUELA.

As all the important trading centers of the country are near the Caribbean seaboard, or have river or lake ports, such as Ciudad Bolívar and Maracaibo, no special packing requirements can be cited for Venezuela, except that the packing should be as light as possible, consistent with the safety of the goods contained, because of the fact that the customs duties are assessed upon the gross weight of the package.

Textiles should always be packed in pressed waterproofed bales, tied with iron strapping, after the old British method, which has now been very generally adopted by American exporters of cotton manufactures.

A great many articles shipped to Venezuela in packing boxes from the United States—such as shirts, etc.—might better be packed in pressed bales. There is no objection on the part of the importers to the payment of packing charges for the labor and material used; the material is invariably used again by the importers when repacking shipments for the interior of the country, and if not obtained in this manner it would have to be imported as a separate item. This is a question for special study on the part of each manufacturer.

Shipments of goods destined for Ciudad Bolívar and the Orinoco River should be packed in square bales, boxes, or crates. Barrels or round containers, except for cement, should not be used, as all freight

must be handled up the steep river banks and loss often occurs through the round objects rolling into the water.

Numerous complaints of damage to shipments of paper have been made during the past two years in Venezuela, where large quantities of fine lithographing paper are imported for the use of the cigarette factories of Caracas.

All fine papers should be packed in the following manner: Each ream is made into a package, laid flat, and wrapped in heavy paper with the ends of wrapping paper folded over and pasted securely—not tied with cord, since these cut and damage the edges of the contents. Eight reams are then packed in a pressed crate, as follows: The baseboards of the crate should be at least 1 inch in thickness with wooden cleats running across the width, nailed from the inside outward and not from the outside (cleat side) inward, as a nail is very likely to work loose and cut into many sheets of paper. The headboards are prepared in the same manner, and both the top and bottom, reinforced by the cleats, should be strong enough to prevent any possible bending and to stand handling en route. Then strong iron straps are used, fastened across the top and bottom boards and down the sides and cinched when the entire crate is pressed together. This method prevents any possible movement, bending, or creasing of the paper, the weight is as light as possible, and this has been found the most satisfactory way to pack paper for export to Colombia and Venezuela. The method described is applied to all fine papers, which are always ordered in large standard sheets, to be cut to size by the numerous print and book shops in the countries mentioned. The crate should, of course, project far enough out over the edge of the paper packages to prevent rubbing against other freight.

Print paper should be packed in folded cylindrical rolls, covered with a double thickness of heavy wrapping paper, with heavy folded ends to protect the paper, and cords should not be placed over this wrapping in such a manner as to cause cutting of the edges at the ends.

DAMAGE CAUSED BY CARELESS HANDLING.

In Venezuela the responsibility for damage to goods in transit can be placed more readily than in Colombia, where goods undergo many handlings in the country before reaching their final destination. On account of the requirements for light packing, the method of baling has been universally adopted for textiles, but great loss, damage, and complaint has been caused by the careless handling of such goods by American carriers, about 40 per cent of the bales received at Caracas during 1920 from the United States showing marks of cargo hooks, the damage often penetrating far into the bale and ruining many yards of valuable cloth. Similar shipments received from Europe did not show anything like such a degree of damage from careless handling. This is a matter in which the shippers should take an active interest, to bring about better methods of supervision and control by warehouses, docks, and steamship companies. The responsibility should be fixed somewhere, because this is one of the many relatively small matters that will determine the prosperity or failure of American foreign trade in the years to come.

IMPORTANCE OF REGISTRATION OF TRADE-MARKS.

The importance of trade-mark registration is much greater in Venezuela than in the United States on account of the difference in the legal point of view as to the ownership of trade-marks. In common with most other Latin-American countries, Venezuela's system of trade-mark registration rests on the "attributive" system—according to which the property rights in a mark are derived entirely from the law and depend upon the registration of the trade-mark—and not upon what is known as the "declaratory" system, which is recognized by common law in the United States, use being the basis of property in a mark and registration merely an additional means of protecting the property right acquired by use.

In Venezuela registration of a mark is usually granted without investigation into the right to its use, though after due notice to those interested by publication in the Official Gazette. When once effected, registration is final. The importance of registration is therefore greater than in the United States, in view of the possibilities of unfair registration under the trade-mark laws in effect in the country.

Recent legislation in Venezuela fully protects trade-marks and commercial names and brands that have been legally registered. Unlawful use of a registered trade-mark, brand, or commercial name, and imitation of goods protected by these registered marks, is made a matter of penal prosecution by the office of the prefect of police having jurisdiction. So far as the law itself is concerned the issue is perfectly clear, but agents and representatives of American firms that have registered marks in Venezuela should be careful to note any such infractions or improper use of their marks or brands and should at once call the attention of the proper authorities to the case, furnishing proof of the violation of the law.

The office of trade-mark registration is at the Ministry of Fomento, Ramo de Privilegio 6 Patentes de Industrias, Caracas.

The duration is 30 years (renewable).

The fees are: Seal and stamp for application, 1.50 bolivars (\$0.29); seal and stamp for certificate, 45 bolivars (\$8.68).

The application must be made on stamped paper of the seventh class and should contain the name, residence, and place of business of the applicant; the class of articles to be marked; a detailed description of the goods so marked; a description of the mark, in duplicate, showing the manner of its application; 10 copies of the mark; certificate of a foreign registration duly legalized by a Venezuelan consul; and a signed declaration that the party making the application has the right to use it; that it does not resemble a mark already registered, and that the copies are correct and exact. The application must be published in the Official Gazette, for which an electrotpe must be furnished. The final certificate is issued on paper of the third class. There is separate registration of "marks of manufacture" and "marks of commerce." If a power of attorney is included (as in a case where the application is made for the firm by its agent in Venezuela), it must be legalized by a Venezuelan consul. Registration is limited to the duration of the registration in the country of origin, provided that does not exceed 30 years.

While unfair use of trade-marks and brands has not been common in Venezuela, there have been several cases of imitation of well-

known American brands, and American manufacturers should instruct their representatives in the country to be diligent in the detection and prosecution of such infringements, and the agent should be supported by adequate allowance for expenses when such cases occur.

LEGAL REGISTRATION OF DRUGS AND PATENT MEDICINES.

Article 24, paragraphs 1, 2, and 3, of the national sanitary law of Venezuela, contained in the organic decree of the sanitary laws, dated January 2, 1920, provides for the rigid inspection of all drugs and medicinal preparations offered for sale in the country by the National Sanitary Service, which was provided for by the above-cited decree. Prior laws provided for the registration of patent medicines in connection with trade-marks, etc., but this new law provides also that the chemical formula of the remedy shall be included. It was held that old registrations must be made again, to include the chemical formula of the drugs, patent or proprietary medicines, chemical combinations, etc.

In an official notice of the National Sanitary Service, issued by its central office at Caracas and dated September 24, 1920, attention was called to the effects of this law. Applications can be made through the Ministry of Hacienda (Treasury Department) in Caracas, the cost being 50 bolivars (\$9.65) for each separate article registered. Registration can be made by the duly authorized agent of the company or individual residing in a foreign country, and any properly registered druggist can make such registration for the firms whose goods he handles. Unless such registration is made, druggists and others offering unregistered articles for sale will be heavily fined.

While the letter of this law requires an exact copy of the chemical formula to be registered, in cases where a valuable secret formula is involved, a statement such as that given by the manufacturers of Enos Fruit Salts is accepted, as follows:

Enos Fruit Salts: Derivative compound; containing about 46 per cent of fruit derivative, together with about 52 per cent of alkaline salt, for producing effervescence.

It is the intent of the national sanitary law not to hamper trade, but to protect the ignorant mass of the population from abuse by the sale of worthless or harmful remedies.

REGISTRATION OF FOREIGN COMPANIES.

The registration of foreign corporations in Venezuela is governed by the provisions of the Commercial Code, which are to the effect that foreign companies must establish a legal residence in Venezuela and maintain a duly legalized representative in the capital. A new law of July 4, 1917, provided for the establishment of stock exchanges in all the commercial centers of the country where there are chambers of commerce. Every company with circulating bonds or stocks was obliged to register with the exchange offices, paying a registry fee of one-fifth per 1,000 of the subscribed capital as a registration fee. A period of 90 days was allowed for all stock companies then existent in the country to register.

REGISTRATION OF TYPEWRITTEN DOCUMENTS.

A decree of November 11, 1911, forbade the registration of typewritten documents, but the provisions of this law have since been made applicable only to documents that are presented for registration in the office of the registrar, and not applicable to any other documents. However, according to an interpretation recently handed down by the Ministry of Foreign Relations to the Ministry of the Interior and approved by the latter, typewritten documents may be authenticated by the principal and subordinate registrars of the Republic, regardless of the resolution in question. This was made possible by the desire to aid in the registration of important legal documents originating in foreign countries.

EFFECTIVE METHODS OF ADVERTISING.

The catalogue, well presented and printed in Spanish, may be said to be the best means of trade promotion in Venezuela, aside from the direct personal effort of representatives of the firm desiring to increase its trade with that country. As a rule, catalogues are valued highly, kept on file, and referred to frequently by the average Venezuelan importer. They are also eagerly searched for new and attractive goods which it is thought will have a ready sale in the country. The best and most effective catalogues are those printed in the Spanish language and giving the weights and measures in both systems, the equivalents of our system being given in the metric system. This greatly assists the merchants in calculating import duties, freights, etc., and in making comparisons with similar goods from Europe. It should be borne in mind that the Venezuelan importer is a very shrewd business man and takes every advantage of comparative offerings from all market sources, carefully comparing prices from Manchester, Liverpool, Hamburg, and New York and taking into account the difference in time, freight rates, etc.

All catalogues should display illustrations of the factories or buildings of the concern, as importers like to feel that they are doing business with a large concern. Interior views of departments, showing methods and processes, are very attractive and interesting for the buyers. Cuts made from actual photographs of packing methods, etc., are useful.

Competition is very keen in merchandising in Venezuela in all lines, and merchants are glad to receive new bulletins of seasonal goods of attractive design and appearance and new styles.

Catalogues sent to the consulates usually do little good, on account of the fact that the consulates are at the seaports where little business is done, the large firms being in the capital and interior cities (except for Maracaibo, which is both a port and an important commercial center). It is not the custom of the country for the merchants to visit the consulates and refer to the catalogues. The best method is for the firm to send each prospective customer on the list a catalogue direct, with a letter treating for new business and explaining service, methods, etc.

Advertising in the better known bilingual magazines (nearly all of which can be found in Caracas, Valencia, Puerto Cabello, and Maracaibo in the stores, clubs, chambers of commerce, and homes of

the merchants) is productive of good results, more especially where the pictorial display shows the article or material in use in some country where conditions similar to those in Venezuela can be readily visualized by the reader.

With the exception of posters and pictorial display in the motion pictures, advertising in the Venezuelan newspapers or magazines does not reach about 80 per cent of the population. It should be borne in mind that printed matter is useful to only about 20 per cent, or less, of the total population.

Local newspapers are always very good mediums and are being used more and more by American firms for advertising. The daily papers are small, as compared with those of the United States, but are read carefully and completely and pass from hand to hand very often, thereby reaching a greater number of people than the circulation figures indicate. The daily papers of Caracas reach all the important points of the interior, being distributed by mail.

Catalogues sent to Venezuela that are printed in English, unless specially requested or intended to cover an emergency condition of the trade, do very little good and may be considered lost value. During the past two years the country has been flooded with such catalogues, which are a dead loss.

Agents should be kept well supplied with the advertising literature of the firm, and their ideas and suggestions for new publications should be considered and incorporated whenever possible.

A very good method of advertising and one that has long been used by the older German and British firms doing business in Venezuela is that of sending the customer a cordial personal letter on his birthday and the anniversary of his establishment, a card at Christmas and New Year's, and periodical personal letters about the trade and conditions, the idea being to cultivate a personal relation between buyer and seller. Importers in Venezuela like to feel that they count with their connections in the United States, that they are valued customers, that their interests are being watched, and that there is a personal basis of agreement and understanding. The usual stereotyped form of trade letter does no good whatever, and a stamped signature is regarded as an insult. All letters to customers should be signed by the head of the firm or the manager of the department handling the business.

For reaching the working class of the people, a good trade-mark of some simple design is the best method. The people buy year after year the same articles, such as tools, cotton goods, etc., which they know by the mark. For a design some familiar object of the country should be used, such as an outline of an alligator, a monkey, a snake, a palm tree, a spear head, an arrow, a flower, a star, or some other such object. These new trade-marks should be brought to the attention of the general nonreading public by means of brilliant posters displayed on the walls about the towns and cities. In these posters very little reading matter can be used, but the mark and name, which should be "catchy" in the Spanish tongue, should be given great space and displayed to the best possible advantage with colors.

Motion pictures can not be overlooked as an advertising medium. All classes go to the pictures, which are found in nearly every small town.

Taking into consideration the fact that only 15 per cent of the total population can afford luxuries, and that the purchasing power of the people as a whole is quite low (though it is higher per capita than in either Colombia or Ecuador), and basing the comparison on the total annual commerce of the country in general, it may be said that money spent on judicious and well-adapted advertising in Venezuela is productive of greater and more immediate results than in the United States.

TRADE-PROMOTIVE EFFORTS OF VENEZUELAN GOVERNMENT AND CITIZENS.

By a decree of March 29, 1919, the Venezuelan Government created the post of consul general of Venezuela in New Orleans, with jurisdiction over the States of Louisiana, Mississippi, Alabama, Georgia, Texas, Arkansas, Missouri, Iowa, Nebraska, Tennessee, Kentucky, and Ohio, the remaining States of the United States coming under the jurisdiction of the consul general at New York. The main object of this provision was to promote commercial relations with the southern part of the United States.

The same year the Bureau of Commercial Policy—corresponding to the Bureau of Foreign and Domestic Commerce of the United States, but coming under the direction of the Ministry of Foreign Affairs of Venezuela—was created and a prominent Venezuelan was sent to the United States and to Europe on a commercial mission having to do with the establishment of commercial-agent offices in the various capitals and trade centers of the world. The Bureau of Commercial Policy has, since its creation, made great strides in the promotion of trade between Venezuela and the United States. A Commercial and Industrial Bulletin is published weekly and distributed throughout the country. This publication contains timely reports and articles relating to the import and export trade of Venezuela and also to domestic industries.

In June, 1920, another special representative was sent to Japan to study the commercial relations of the two countries and recommend an adequate means of increasing the traffic.

The decree of January 10, 1920, created the posts of commercial agents in the principal countries having commercial relations with Venezuela, namely, the United States, Great Britain, France, and Spain. The salary allowed was 1,200 bolivars (\$231.60) per month, with a travel allowance of 800 bolivars (\$154.40).

In 1920, from May until June, there was held in Caracas the first National Exposition of Venezuela, but only domestic products of agriculture and manufacture were represented, though exhibits were invited of motor cars, trucks, tractors, agricultural implements, and machinery, etc. American manufacturers lost an excellent opportunity to advertise their goods.

All the principal commercial centers of Venezuela have chambers of commerce which are semiofficial in character, with the Chamber of Commerce of Caracas acting as the central national body. In May, 1920, an agreement for commercial arbitration was concluded between the Caracas Chamber of Commerce and the Chamber of Commerce of the United States, the Caracas Chamber of Commerce act-

ing for the chambers of commerce of Maracaibo, Carupano, Ciudad Bolivar, and Puerto Cabello. The agreement was very similar in its action and effect to that previously made with the Argentine and Brazilian Chambers of Commerce, whereby committees are appointed in both countries to act on all cases of commercial dispute.

Late in 1920 a movement was begun for the formation of an American chamber of commerce in Caracas composed of members representing American firms and banking institutions in Venezuela, but the organization was delayed temporarily on account of the business situation prevailing during that period.

MARKETS FOR SPECIFIC CLASSES OF MERCHANDISE.

BAGS AND SACKS.

Venezuela makes its own bags from imported jute and hessians. In 1919 the imports amounted to 511,270 kilos (kilo=2.2046 pounds), valued at 1,253,738 bolivars (\$241,971). During the war, when not enough imported material could be secured, considerable interest was displayed in the development of the country's resources in natural fibers such as henequen, sisal, and other species of the agave. Many small plants were started, making rough sisal-fiber bags for the coffee and cacao exports, and these factories continue to do a good business; but it is not thought that they can continue to compete with the imported jutes after conditions return to normal and the supply from India, through Great Britain, is obtainable at pre-war prices again.

According to Consul Homer Brett, the market for cotton bags in La Guaira is very small, as no flour mills or plants for grinding and mixing feed are located there. The principal demand comes from establishments turning out refined sugar, but even these are supplied in large part by the bags made in the country of domestic materials. Such bags hold 10 kilos of sugar (1 kilo=2.2046 pounds).

Rates of import duty have a strong bearing on the demand for foreign-made sacks and are as follows, per 100 pounds gross weight:

ART. 660. Sacks of unbleached hemp, jute, nankeen, or similar fabric, \$10.28.

ART. 661. Sacks similar to above, but secondhand, \$3.43.

ART. 662. Sacks of canvas, duck, or similar fabric, \$17.13.

Common, heavy bagging pays \$3.43; lighter bagging, \$10.28; heavy duck and duck of medium weight pay \$10.28; light duck pays \$17.13. The domestic cotton mills can sell cloth suitable for sacks at a lower price than imported material, but they can not supply the entire demand.

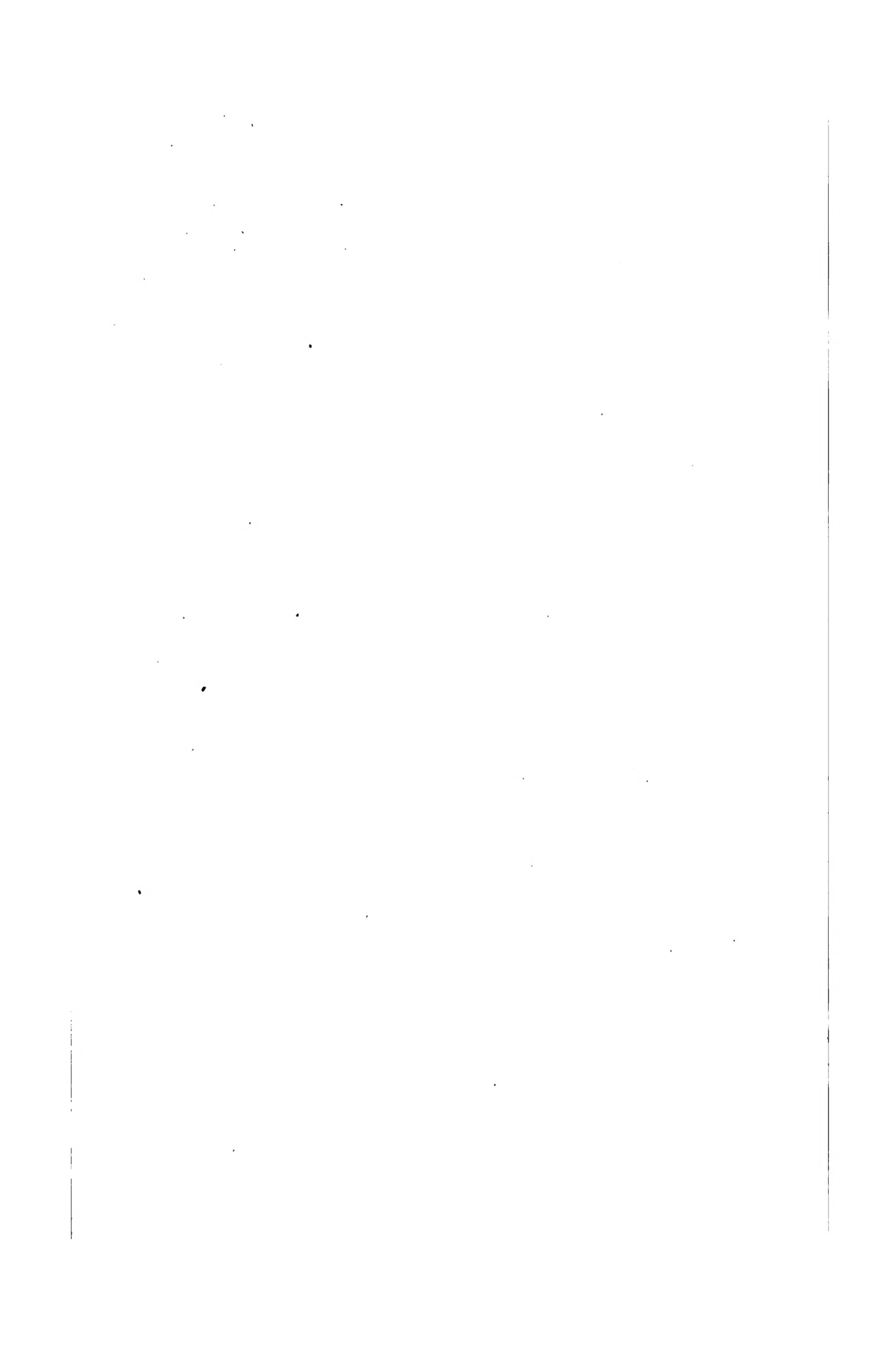
Consul Frank Anderson Henry states that the exports from the Puerto Cabello district of Venezuela which require bagging consist of coffee, cocoa, sugar, and frozen meat. Coffee is usually shipped in bags of 60 kilos each. It is estimated that from 300,000 to 500,000 bags of products are exported from Puerto Cabello annually, not including frozen meat. The greater part of the bagging is brought in without previously being made up into sacks, and all bags imported are secondhand. This is due to the fact that the customs duty on new bags made of jute is \$10.28 per 100 pounds, while secondhand bags and bagging pay only \$3.43 per 100 pounds. According to item 27 of the tariff, coarse secondhand bags suitable for shipping mangrove bark, divi-divi, shells, etc., are admitted free of duty. Some bags are made in the country of domestic materials, the principal varieties being of fique (agave fiber) and henequen.

CANNED GOODS.

The importation of canned goods is limited to a very small percentage of the total population of 2,800,000 people. Probably not more than 10 per cent can be termed consumers of canned goods, though the working class is disposed to buy any article that their limited purses can afford. Probably not more than 1 or 2 per cent are habitual consumers of canned goods of all kinds. Fresh meats and vegetables are abundant and cheap, and native fruits are reasonable in price, including the great food staple of the people, the banana and plantain; but milk is rather high in price, retailing at 10 to 12 cents per quart in most places. American canned fruits and vegetables retail at 50 to 90 cents per tin of 2½ pounds. Prior to the opening of the Panama Canal importers had a keen interest in the development of a direct trade in canned and dried fruits with the Pacific coast of the United States, but this expected trade has not developed to any extent and the business continues to be done through the export commission houses of New York, the main difficulty appearing to be the lack of steamer connections through the Canal to Venezuelan ports and a lack of effort on the part of the Pacific coast canners to establish the trade directly. Importers are anxious to extend their relations with the Pacific coast in this trade, and with the provision of better steamer service between Pacific coast ports and the Canal since the war, with rapid connections at Colon, it is thought that more attention should be paid to this development. Shipments of olive oil, which now comes principally from Spain, might advantageously be included with canned fruits and dried fruits from California.

In the normal years before the war Germany led in only one article of canned goods sold to Venezuela, namely, butter. Danish butter has long been used in Venezuela and is in great favor; it was usually imported through Germany, but may be credited to Denmark. The United States held the second place with butter, although most of the American butter went to the cheaper trade, as the quality was inferior and the packing less attractive than in the case of the butter from Europe. The modern dairy was established at Maracay seven years ago by Gen. Gomez and now has a capacity of 180,000 kilos (1 kilo=2.2046 pounds) of butter per year, which amount greatly affects imports of the article; moreover, a canning department has been added, and tinned butter is shipped to other centers of the country, such as Maracaibo and Ciudad Bolivar. Calculating the annual total consumption of butter prior to the war at about \$400,000 (imported), it may be said that at the present time the local domestic factory turns out about one-half of the butter consumed in the country. The people of the poorer class do not use butter in any form.

The United States leads in the shipments to Venezuela of dried meats, canned meats, and fish of all kinds—with or without vegetables—tinned sausage, pickles, and canned corn. It has led also in cottonseed oil, although this article has now been removed from the list of imports on account of the present production of the domestic mills, which is more than enough to supply the needs of the entire country at the present rate of consumption and even



420 VENEZUELA: A COMMERCIAL AND INDUSTRIAL HANDBOOK.

Articles and countries of origin.	1917	1918
Earthenware and crockery:		
United States.....	\$26,032	\$73,500
United Kingdom.....	63,742	60,365
Netherlands.....	7,256	.....
Trinidad.....	.....	2,683
Panama.....	.....	1,427
Italy.....	1,187	.....
Other countries.....	1,773	110
Total.....	99,990	138,085
Glass and manufactures of:		
Bottles—		
United States.....	73,532	11,532
Trinidad.....	2,265	.....
United Kingdom.....	.....	4,743
Other countries.....	.....	138
Total.....	75,797	16,413
Manufactures, n. e. s.—		
United States.....	49,403	47,613
United Kingdom.....	.....	974
France.....	6,139	2,120
Italy.....	.....	1,194
Other countries.....	2,250	315
Total.....	57,833	52,216
Plate and flat—		
United States.....	13,047	14,459
Other countries.....	7	346
Total.....	13,054	14,805
Domestic wares:		
United States.....	143,192	89,928
United Kingdom.....	18,033	17,868
Netherlands.....	4,319	.....
Spain.....	1,941	.....
Other countries.....	1,794	149
Total.....	169,284	107,945

DAIRY AND MEAT PRODUCTS.

As is stated by Consul Homer Brett, the consumption of imported dairy products in Venezuela is confined almost entirely to the larger cities, as the poorer people in the smaller villages and the country neither need nor can afford to eat imported foods. The imports of these products for the years 1913, 1916, and 1919 were as follows:

Articles.	1913	1916	1919
Butter:			
Pounds.....	1,727,869	600,194	441,662
Value.....	\$329,039	\$101,953	\$363,819
Cheese:			
Pounds.....	556,349	156,763	91,751
Value.....	\$64,419	\$41,968	\$40,080
Milk, condensed:			
Pounds.....	219,875	79,635	104,518
Value.....	\$18,352	\$6,987	\$13,277

In 1915 a modern creamery was established at Maracay. It is a complete plant and produces cheese, canned milk and cream, and hog products, as well as more than 1,000 pounds of butter per day. A published statement says that the milk used in this "Lactuario" is exceptionally rich in butter fat, containing $4\frac{1}{2}$ per cent, whereas the average content of milk in Holland is from $3\frac{1}{2}$ to $3\frac{3}{4}$ per cent. In other words, it takes, according to the same statement, 26 liters

(6.86 gallons) of Dutch milk to produce 1 kilo (2.2 pounds) of butter, whereas the same amount can be obtained from 18 liters (4.75 gallons) of the milk of Maracay. The butter is sealed in tins of various sizes, but for Caracas consumption it is also sold in $\frac{1}{2}$ -pound packages at a price of 80 cents per pound, which is much less than the present price of tinned Danish and Dutch butter.

In all the cities and towns of Venezuela milk is sold at prices varying from 10 to 15 cents per quart, a considerable portion being goat's milk. The goats were originally of Canary Island stock, but are not the equal of the present Canary goats as milkers. It is possible to obtain homemade butter, but the quality is poor and the making of it is unusual. Because of the steepness and narrowness of the streets in many cities, milk wagons are not used, deliveries being made on horseback, but it is not unusual for cows to be led from door to door and milked in the presence of the customer. When this method is used the average purchase is only about half a pint, the milk being drawn directly into a glass furnished by the purchaser. On these door-to-door trips calves always accompany the cows and are tied to one of the cow's legs while milking is going on. It is not considered safe to use milk except while still warm from the cow or after it has been boiled.

Queso llanera, or cheese of the plains, is a staple product. It is a white, porous, and very crumbly cheese, which sells at present for about 25 cents per pound wholesale. A great many of these cheeses are produced in the Paraguana Peninsula from goat's milk; sometimes they are very bad, and there have been numerous instances of poisoning as a result of eating them. The Maracay creamery is now making yellow cheese of good quality.

There are no statistics whatever in regard to the dairying industry in Venezuela. The total number of cattle of all kinds in the Republic is variously estimated at 2,000,000 to 8,000,000 head, with the opinion of many observers inclining toward the lower figures. Of these only a small percentage are ever milked at all, and little commercial use is made of the milk or its products. Probably about 15,000 cows in the entire Republic are milked for commercial purposes. The annual values produced are approximately as follows: Milk sales in cities and towns, \$1,300,000; Maracay butter and cheese, etc., \$270,000; country cheeses (mainly from goat's milk), \$214,000; total, \$1,784,000.

It is difficult even to guess at the number of goats that exist in the country or that are milked regularly.

There is an increasing tendency, in Venezuelan import statistics of meat and dairy products, to group these and other articles under the general heading, "Conservas alimenticias," or preserved foods. Until the middle of 1915 imports of hams were set forth separately, but since then these, as well as sausages, salt meat, and condensed milk, have disappeared from the list.

According to Venezuelan figures, the country's total imports of certain important products during 1919 were as follows: Canned and preserved foods, 237,089 kilos (1 kilo=2.2046 pounds), valued at 504,740 bolivars (\$97,415); lard, 59,282 kilos, valued at 105,790 bolivars (\$20,417); stearin, 447,211 kilos, valued at 952,691 bolivars (\$183,869); tallow, 12,156 kilos, valued at 24,573 bolivars (\$4,743).

seven times the normal, but it was found that the product could be obtained from England, and the shortage was relieved. The supply of gunpowder became so deficient as to interfere seriously with the prosecution of the various forest industries of the Bolivar district, as none could be obtained from abroad, and the powder factory in Caracas could get no saltpeter. Large quantities were ordered, but, as soon as it appeared probable that everyone could get powder, merchants hastened to cancel their orders, to avoid being overstocked with a commodity almost certain to decline in price.

Probably for some time to come all heavy chemicals will continue to be supplied by the United States, as freight rates are lower than from Europe and deliveries are quicker. The trade in drugs and medicines is more highly competitive, and many articles from France, Italy, and Spain are sold that American producers might supply. There has been a great increase in American sales, but it is possible that these have been the result of temporary conditions. American makers of patent medicines have lost trade, and are still doing so, through having appointed as agents foreign business firms directly interested in promoting the sale of competing articles of European origin. Where possible, American goods should be represented by American or by Venezuelan agents. Representation by persons of other nationality is generally inadvisable.

There is no reason to expect any considerable increase in Venezuelan imports of chemicals for industrial purposes, as there are no new manufacturing industries in prospect. Those that exist do so only under the shelter of a protective tariff and are limited to the home market.

Imports of gasoline and kerosene will probably decline, as these articles are now being produced by a refinery that has been established in Venezuela. Lubricating oil is not produced, and importations of it have increased, principally because of the growing use of the automobile.

GLOVES.

Imports of gloves into Venezuela are of small extent. The use of gloves, as Consul Brett says, is practically confined to the city of Caracas, and even there to the more well-to-do classes; in the coast cities and towns the heat makes the wearing of gloves of any sort very uncomfortable.

It being customary in Venezuela to go into mourning even for the most distant relatives, the principal demand in women's gloves is for those of black cotton to go with mourning costumes. Few gloves of kid or silk are worn and still fewer are imported commercially, because the persons able to afford them travel frequently and make their purchases abroad. No woolen gloves are used, and there is no appreciable seasonal difference in the demand except in so far as all merchandise moves more rapidly in December and January, when the crops are being sold.

Gloves are used by men to a much less extent than by women. Army officers are practically the only men ever seen wearing gloves on the street. Soldiers wear white cotton gloves with full dress

uniforms on special holidays. Men wearing evening dress carry white kid gloves but seldom put them on, and under these conditions one pair will last for years. The only work gloves in use are those of rubber for electrical work.

The tariff provisions relating to gloves are as follows, in dollars per 100 pounds gross weight:

Gloves of bristles	\$17. 13
Bath gloves of cotton or other materials	17. 13
Gloves of cotton, linen, or wool	68. 52
Gloves of skins, kid, etc.	137. 05
Fencing gloves	17. 13
Boxing gloves	10. 27

Silk gloves are not specified but come under the general provisions for articles of silk:

- Articles of pure silk, \$274.10 plus 23.48 per cent ad valorem.
- Articles of pure silk mixed with other material, \$137.05 plus 23.48 per cent ad valorem.
- Articles of artificial silk, pure or mixed with other material, \$137.05 plus 25 per cent ad valorem.

HARDWARE, TOOLS, AND OTHER STEEL PRODUCTS.

Venezuela offers an increasing market for hardware, tools, and structural iron and steel products. In the fiscal year ended June 30, 1914 (a pre-war year), the imports of these articles reached a total of about \$3,330,000, divided approximately as follows: Domestic utensils, \$115,000; building hardware, \$400,000; cutlery, \$81,000; tools, etc., \$132,000.

American hardware is considered to be a little high in price in Venezuela in comparison with the German and English lines, but it is better and more durable. The chief complaint of the importers in this line is that American goods are too heavy, the import duty being based on the gross weight of the package. European makers of hardware and tools study the Venezuelan market and make special designs and lightweight articles to please the trade. This fact has been an important element in the sales that they have made.

One large American jobbing house is well represented in the country by a native agent who covers the entire interior and does a large business, his customers buying directly from his jobbing firm instead of by the usual channel of the export commission house.

The demand for steel products, tubing, etc., is rapidly increasing in the Maracaibo district on account of the opening of the petroleum fields and the coal mines. As a rule, however, the companies purchase through their own offices in the United States or England. All horse-shoes are made from iron imported in bars, the importation of the manufactured article being rendered prohibitive by a high duty in protection of the native industry. The Maracaibo region annually takes about \$50,000 worth of barbed wire for fencing.

American cutlery appears to have been well established in the Venezuelan market during the war, whereas prior to the war the market was dominated by the English and German product—principally the latter since 1910. The demand for this line is steadily in-

hood of Coro this is done quite extensively by women, who make the palm straw into braids about an inch in diameter and then sew them into a cheap hat, which sells there for about \$1 a dozen.

All raw materials for the straw-hat industry have to be imported, and the cost of these, after freight and duty have been paid, is considerable. Statistics are not available as to the extent of raw materials imported.

Prices of imported supplies have been subject to wide variations during recent years. Italy, France, England, and the United States, in the order named, have been the principal sources of supply, but in this as in other lines there is a marked tendency to turn to the United States. Formerly straw braid was bought at \$57.90 to \$77.20 per bale of 240 pieces, the width of the braid being from 16/17 of a millimeter to 5 millimeters. Nearly all the braid used is white, only very small amounts of colored braid being imported. Criticism of the straw braid from the United States has been made by manufacturers, because it comes in packages of 100 pieces instead of from 200 to 300 pieces, to which they are accustomed. They further claim that it is not as well whitened as that from Europe. Importation of supplies is made direct by the manufacturers or by importers for their account. There is no production of straw braid within the confines of Venezuela.

LACES AND EMBROIDERIES.

In the Venezuelan statistics of imports, as Consul Homer Brett states, laces and embroideries are given under the heads of "encajes" and "passementerie." The first relates more or less exclusively to laces, while the second includes embroideries, ribbons, dress trimmings, and some other similar articles. For the year 1919 imports of laces amounted to 584,925 bolivars (\$112,891), and of "passementerie" to 83,039 bolivars (\$16,027). In both cases the figures were exclusive of large importations made by parcel post, a method greatly favored for this and similar lines, for the reasons that duties are levied upon net instead of gross weights, consular invoices are not required, and the probability of customs difficulties are greatly reduced.

There are no "native costumes" in Venezuela except, perhaps, in remote districts. In the cities American and French fashion magazines are received promptly and are followed with great fidelity. In the making of clothes for babies and small children there is a tendency to use much more lace and embroidery than is now customary in the United States. Cotton and linen clothing can be worn the year round in most Venezuelan cities, and this leads to a greater proportional use of laces and trimmings among the more well-to-do; but in considering the market here it should always be remembered by the prospective exporter that the mass of the population has small purchasing power, and that the whole number of people able to purchase anything above the barest necessities probably does not exceed 200,000 in all Venezuela.

In sales of cotton textiles and knitted goods of cotton, American trade has made tremendous strides in the last few years, but so far

little progress is apparent in sales of those manufactures of cotton the production of which involves the use of less material and of more labor. Handkerchiefs, towels, ribbons, laces, embroideries, sewing thread, etc., still come from Europe almost entirely.

OPTICAL GOODS.

Consul H. C. von Struve states that imports of eyeglasses, opera and field glasses, automobile goggles, microscopes, and unmounted lenses into Venezuela are very largely confined to dealers in Caracas. The market for optical goods of all kinds is very restricted, spectacles and eyeglasses being the articles for which there is most demand. As the number of Venezuelans engaged in occupations that strain the eyes is comparatively small, the majority leading an open-air life, the demand for eyeglasses is less than it would be with a population of 3,000,000 in other more industrially developed countries.

The styles of eyeglasses used in the Caracas district are the same as in the United States, imports since 1914 coming almost exclusively from that country. Before the war glasses and solid-gold frames were largely imported from Germany, as prices there were much cheaper for goods of equal quality; but American goods have now become very popular, and unless offers are made elsewhere of better goods or more favorable prices than American dealers will make, the prospect is that the bulk of these goods will continue to come from the United States. American lenses are said to have attained an excellent quality. The closer proximity of the United States will be an important determining factor in this trade.

Nothing in this line is manufactured in Venezuela except that recently an optical dealer in Caracas has installed machinery to grind lenses, the material for which has to be imported.

Optical goods in practically all cases are imported by the wholesale dealer in Caracas, who furnishes supplies to the few small dealers in other parts of the country while at the same time doing a retail business. The trade is not sufficiently large to support an exclusively wholesale house. Jewelers at times sell opera glasses, but the trade in these is negligible. Importations by firms doing a strictly retail business are rare.

A fair demand exists in the Maracaibo district for spectacle and eyeglass frames and mountings, according to Consul Dudley G. Dwyre, and it is believed that this will gradually increase as the people become educated to understand the benefits derived from a scientific correction of eye troubles. There is also a slight demand for mountings for automobile goggles and sunglasses, as the glare of the sun and the sand is very common.

No optical goods of any description are manufactured in the district. Before the war some German and French articles entered this market, but they were not in any considerable quantities and were not as satisfactory as American goods. American goods are now well known and will be preferred as long as they are sold reasonably. A foreign salesman entering this market with equal goods and lower prices might receive many trial orders.

The high customs duties make retail prices quite high; therefore great care should be taken by American firms to see that orders are filled exactly as specified, and that goods are packed in strict accord-

THE DUTCH WEST INDIES.

LOCATION, AREA, AND POPULATION.

The Dutch West Indies consist of two groups of islands, about 500 miles apart.

The less important of the two groups lies a little east of Porto Rico, between St. Thomas and St. Kitts, and consists of St. Eustatius and Saba and part of St. Martin, the ownership of which is divided between France and the Netherlands. These three islands are small and without harbors, communication with them being possible only by schooner, as a rule. Their commercial importance is negligible.

About 500 miles southwest of the group just mentioned lie the other islands of the Dutch West Indies—Curaçao, Bonaire, and Aruba. Neither Bonaire nor Aruba has a good harbor, but Curaçao has one of the best harbors in the West Indies, and, in fact, in the entire Caribbean Sea.

The most important island, and the commercial and shipping center, of the Dutch West Indies is Curaçao, which is located just north of the coast of Venezuela, almost opposite the peninsula of Paraguana and about 60 miles from the Venezuelan port of La Vela de Coro. St. Eustatius, Saba, and St. Martin are in the leeward group of the West Indian Islands.

The area and population of the Dutch West Indies are:

Islands.	Area in square miles.	Population.
Curaçao.....	210	34,168
Bonaire.....	95	6,714
Aruba.....	69	9,481
St. Martin.....	17	3,369
St. Eustatius.....	7	1,410
Saba.....	5	2,239
Total.....	403	57,381

ADMINISTRATION.

Willemstad, the capital, is the seat of the Dutch colonial government for the West Indian colonies comprising the islands of the two groups mentioned. The administration is vested in a governor, who is assisted by a council of 4 members, all nominated by the Sovereign; there is also a colonial council consisting of 13 nominated members. Each island, with the exception of Curaçao, where the Governor resides, has a chief officer, or "gezaghebber," also appointed by the Sovereign.

The revenues of the colony are derived from import, export, and excise duties, besides sundry land and indirect taxes. Any deficit in the revenue is met by the mother country.

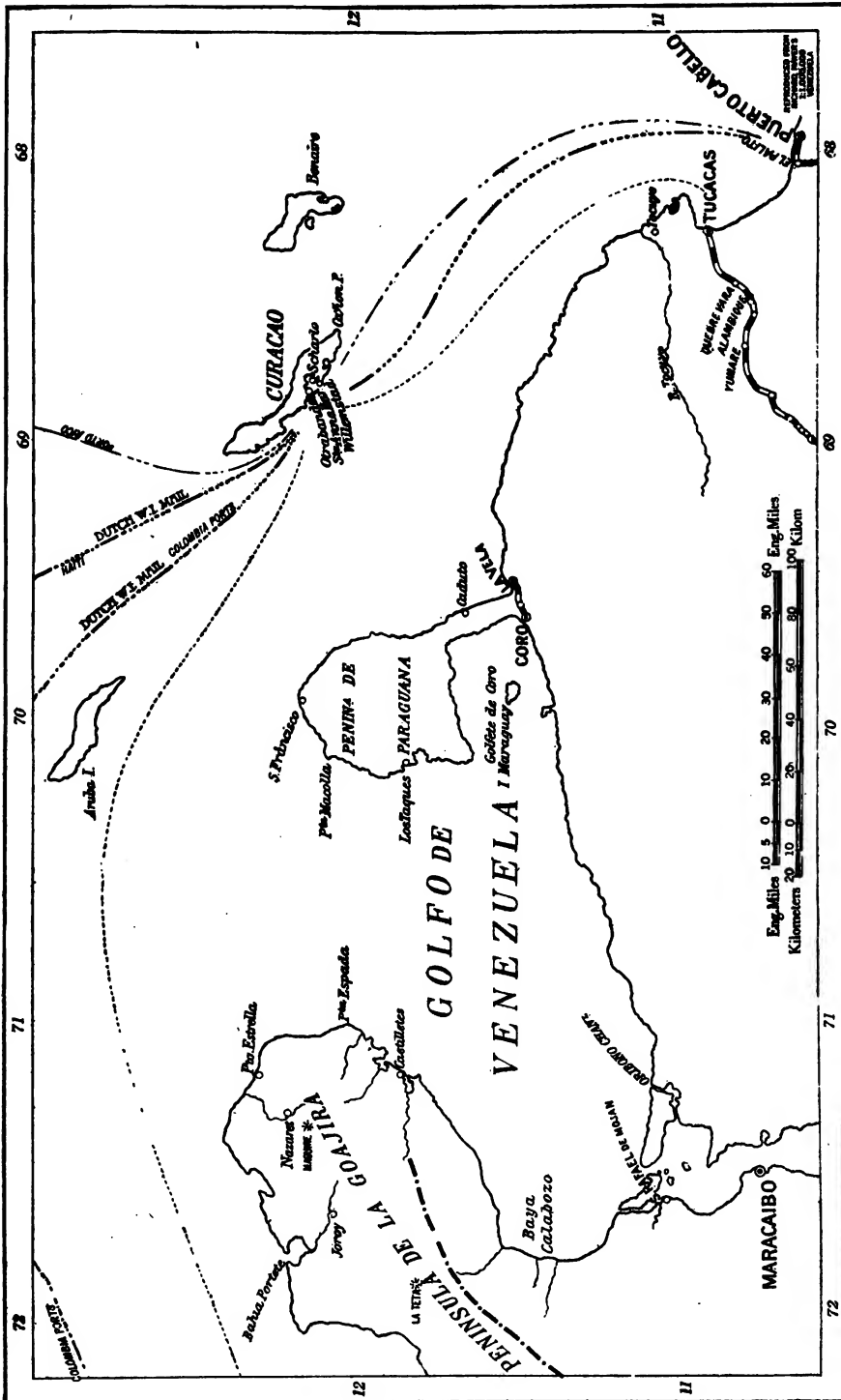


Fig. 20.—Map showing islands of Curacao, Bonaire, and Aruba, in Dutch West Indies.

TOPOGRAPHY AND CLIMATE.

Physically, Curaçao presents no specially noteworthy features. It has no striking altitudes, and its coast line is free from marked irregularities; but it possesses three promontories, Point Cannon, Cape Marie, and Cape West Point, the first named being a place of special danger to shipping because of the strong current and heavy swells that are characteristic of this locality.

The island of Curaçao lies approximately northwest by southeast. Its length is about 40 miles and its width varies between 3 and 7 miles, the narrowest place being between Cape Marie and the port of Willemstad at Bullen Bay on the southern coast. Point Cannon (or "Cañon") is at the extreme southeastern end of the island, the strong current mentioned setting along the coast from east to west and striking close inshore at Willemstad, where it makes the entrance to the harbor somewhat dangerous to shipping.

Climatically and geologically, the characteristics of the island present a strong resemblance to those of the neighboring coast of Venezuela and the peninsula of Paraguana. The formation, like that of many of the West Indian Islands, is volcanic, with a heavy coral capping.

For the most part the climate is very hot, although it is tempered by the prevailing northeast trade winds, which sweep the entire island. Curaçao suffers from the lack of sufficient rainfall, and a poor supply of water is obtained from wells and cisterns. The land is fertile in places, but conditions are not altogether such as are calculated to promote extensive cultivation. Nevertheless, corn is grown to some extent, and tropical fruits and vegetables are produced but not in sufficient quantity to support the demands of the population, quantities being imported from the neighboring coast ports of Venezuela. The island presents a rather barren appearance, there being no heavy timber of any kind, and only widely scattered scrub, principally of the divi-divi tree, with a few bushes here and there. When the rains do come there is sufficient grass to support important flocks of sheep and goats, but seasons are uncertain. All roofs of residences, buildings, and warehouses are connected to cisterns for the collection of sufficient water for domestic use and for shipping. Condensation of sea water has been tried, but proved to be too expensive for commercial use on a large scale.

Curaçao is fortunate in being free from those elements of atmospheric disturbance that have so important an influence on the life of most of the West Indian islands. For one thing, the island is situated outside of the Caribbean region most affected by hurricanes, being visited by violent storms of this character only three times during the past hundred years. Thunderstorms are common during the wet season, and at times slight earthquakes are felt. Newcomers to Willemstad are frequently annoyed by the glare of the sun reflected from the light-colored streets and walks, composed of ground coral and shell.

Travelers stopping in Willemstad prefer the west side of the harbor with rooms facing the channel, where the full benefit of the trade wind is felt day and night, affording a relief from the heat.

There are two rainy seasons of uncertain time and duration, the rains occurring usually from October to January and from February

to May. During the remainder of the year there is practically no rain.

CHARACTERISTICS OF INHABITANTS.

The population consists of three races—the Dutch, the Spanish and Portuguese Jews, and the Negroes, the last named representing about 85 per cent of the entire population.

The Dutch have charge of the administration, harbor, etc.; commerce is in the hands of the Jews; while the Negroes form the bulk of the working classes, tilling the soil to a certain extent, caring for the flocks, and engaging in shipping, the interisland and mainland schooner traffic, stevedoring, the straw-hat industry, etc. The official religion of the colonial government is Catholic. The Jews maintain three synagogues. The Negroes profess the Catholic faith, but they are superstitious and their belief is crude. The Dutch Government maintains a small garrison of soldiers at Willemstad.

The Curaçao Negroes form a distinct type, as compared with the inhabitants of the other islands of the West Indies, such as Trinidad, Jamaica, etc. They are good wooden-ship carpenters and expert sailors with their small schooners. They show the influence of their varied history and descent, even their language being a mixture of Spanish, Portuguese, Dutch, and English, with Spanish predominating in the patois, called locally "papamiento" and used by all classes in Curaçao in daily intercourse with the Negroes. A stranger can make himself understood by these Negroes if he has a knowledge of Spanish, and he can make out to understand them, in turn, though with difficulty.

The men are all tall, raw-boned fellows, good workers, and seamen. Their trim, white-painted, clipper-bowed schooners are known all over the Caribbean for their fine, neat, and well-rigged appearance. The men take great pride in their fast passages to and from the islands and the mainland of Venezuela and Colombia. They are clannish and seldom stay long on the mainland. However, they emigrate to Cuba for the sugar seasons, this being especially true during the period of high wages during the war and the year following the armistice. Such emigration has crippled the industry of coaling steamers at Curaçao during the past two years, coaling companies being forced to import and install machinery in order to coal vessels in the time required. The Curaçao Negroes are independent, well dressed, and fairly prosperous, as compared with the natives of the mainland and many of the other islands. Combined with a good physique they possess considerable initiative and courage and are used very successfully in heavy construction work. Numbers of them sail regularly in the crews of Dutch steamers and also on vessels of the Red "D" Line, from New York.

LANGUAGE.

Dutch is the official language of the colony, but Spanish is the one most commonly used in business and social life. Dutch and English are understood and used to some extent by most business men. Commercial correspondence with any of the business-houses of Curaçao may be in English.

WEIGHTS AND MEASURES.

The metric system is the official system of weights and measures of the colony.

POSTAGE AND PARCEL POST.

Effective July 1, 1915, a 2-cent letter postage went into effect between the United States and Curaçao, including the islands of Aruba, Bonaire, Saba, St. Martin, and St. Eustatius. Parcel-post rates and rulings are the same as for the Netherlands. The parcel-post service is much used by the merchants of Willemstad for the purpose of keeping in stock seasonal merchandise of lines such as dry goods, fancy wear, notions, etc.

CURRENCY.

The Dutch West Indies have their own monetary system, but it is based on that of the Netherlands, the unit of value being the florin, equal to the Dutch guilder and divided into 100 centimes. One florin equals \$0.40 in United States currency. The coins are: Silver, 2½-florin piece (equal to \$1); 1-florin piece, ½-florin piece, and ¼-florin piece; nickel, 5-centime piece; copper, 2-centime piece and 1-centime piece. Paper currency consists of the 100-florin, 50-florin, 25-florin, 10-florin, 5-florin, 2½-florin, and 1-florin notes of the Curaçaosche Bank, the only bank of issue. American silver, gold, and paper money is accepted at par with the florin at the rate of 2½ florins for \$1 United States currency. New York bills of exchange commanded on December 31, 1920, a premium of 4½ per cent, the rate being 2.6125 florins for \$1.

Dutch guilder or Holland exchange is treated like any other foreign exchange by the banks and commercial houses of Curaçao. For example, in January, 1921, New York exchange sold at 2.625 florins in Curaçao, while New York exchange sold in Amsterdam at 3.250 guilders, or at a premium of 30 per cent—that for Curaçao florins being only 5 per cent. However, an American merchant, with bills to pay in Curaçao, could not buy Dutch guilders through New York and pay at par with them in Curaçao, as they would be discounted at the prevailing rate of exchange. All exchange rates fluctuate in Curaçao according to the New York quotations. Curaçao florins are not generally quoted in New York, as there is little demand for them, while the banks in Willemstad quote dollars.

All drafts for presentation in Curaçao are collected by the banks at the prevailing rate of exchange on the day of payment—that is, the date of maturity.

The dollar was at a heavy discount in Curaçao during the war, the maximum being 20 per cent in the latter half of 1918, due to the high premium of the Dutch guilder in New York and the excess of exports from the colony, consisting principally of products transhipped from Colombia and Venezuela through Curaçao to the United States, such as coffee, cacao, hides and skins, sugar, divi-divi, etc.

Before the war, the Netherlands had gold, silver, and notes in circulation, with the notes exchangeable for gold on demand. Now, the gold has been called and the notes of the Netherlands Bank are no longer convertible into gold or silver on demand. These notes

can not be accepted in Curaçao, as they are no longer legal tender, the colony now having its own monetary system.

During the war gold could not be imported to Curaçao from the United States to correct the balance of trade. With the present free export of gold from the United States, it is thought that dollar exchange could not have a discount of more than 2 per cent, as, in the event of an unfavorable balance of trade for the United States, it would be corrected by imports of gold to Curaçao. With the sudden drop in the prices of export commodities such as coffee, cacao, hides and skins, divi-divi, etc., in the latter part of 1920, Curaçao was again becoming the depository for storage of these exports from Venezuelan ports to await more favorable market conditions, and exports were heavily curtailed, making the balance of trade unfavorable to the colony, with the prospect of still higher premiums for dollar exchange, though Curaçao merchants, because of the very nature of their business and trade, were not, as a rule, as heavily overstocked, when the drop in prices came, as those of the mainland in Colombia and Venezuela. The American exporter to Curaçao draws in dollars, and the favorable or adverse rates of exchange concern only the purchaser when buying New York drafts for payment.

The government and merchants of Curaçao are trying to maintain the Venezuelan bolivar and American dollar at par rates, or nearly so, on account of the fact that the colony does not produce sufficient foodstuffs to feed the population and quantities have to be imported from Venezuela and the United States for domestic consumption.

American paper currency was long considered as equivalent to gold, but during the war this market was overrun by American notes coming from the South American Republics, where they could not be used in the interior for the same purposes as gold, and, as these notes could only be used for remittances to the United States, they had to be rated at a lower value than the rate of dollar exchange on account of the expense of freight and insurance. The local value of these notes was gradually reduced to as low as 2.10 florins.

RATES OF EXCHANGE.

The colonial laws do not impose any control of banking business, everybody being free to frame and conduct his business as he may deem expedient. To a certain extent the Curaçaosche Bank, a government institution, furnishing money to the local government and having the exclusive right to issue bank notes, controls the rates of exchange by selling drafts at rates fixed from time to time, which influence local trading in foreign exchange. As has been stated, the policy of this bank and of the local merchants is to maintain dollar exchange and Venezuelan bolivars as near par as possible, on account of the purchase of foodstuffs for domestic consumption. The Curaçao Bank now has correspondents in New York and the principal European cities and is selling drafts on the Netherlands and the United States. A consistent policy to carry through the Dutch currency might have had as a result the quoting of sight drafts in guilders on the Netherlands at par, foreign drafts to be quoted with premium or discount according to the circumstances. This policy has been adopted in the other Dutch colonies, but there is a tendency in Curaçao to keep the rate of the American dollar as close as pos-

sible to par because of the fact that nearly all exports go to the United States and the buying also is mostly with this country. Another effect would have been that Curaçao currency would have been subject to exchange fluctuations of Holland, while the business of the colony was distinctive in its character.

In 1914, at the outbreak of the war, the rates of foreign exchange in Willemstad were as follows:

Guilders, on Holland, at 1.0075 florins.
 Dollars, on United States, at 2.525 florins.
 Pounds sterling, on England, at 12.20 florins.
 Francs, on France, at 0.49 florin.
 Marks, on Germany, at 0.59 florin.
 Bolivars, on Venezuela, at 0.465 florin.

New York quotations of rates of exchange are the basis of Curaçao rates, but to some extent the rates are affected by quotations in Venezuela and other neighboring countries. German marks are not quoted now. After the beginning of the war the government sold postal money orders only on the Netherlands and the other Dutch colonies.

The following table gives the exchange rates in effect on January 1, 1921 ("florins" are Curaçao florins):

Items.	Selling rate.	Buying rate.
DRAFTS.		
Dollars.....	<i>Florins.</i> 2.625	<i>Florins.</i> 2.6125
Guilders.....	.825	.8125
Pounds sterling.....	9.72	
Francs.....	.16	
Swiss francs.....	.43	
Bolivars (Venezuela).....	.4625	
Pesetas (Spanish).....	.36	
Marks.....	.045	
GOLD COIN, ETC.		
\$20 gold pieces, United States.....	52.50	51.75
United States paper currency.....	2.60	
Venezuelan gold, 20 bolivars.....		9.75
Venezuelan paper currency.....		1.455
Pounds, gold.....		12.50
Colombian 5-peso gold coins.....		12.30

¹ Bolivar.

BANKS AND BANKING.

The colony of Curaçao is governed according to rules established by the home Government in the Netherlands. The regulations contain the following article with relation to banking in the Dutch West Indies: "For the creation of banks issuing bank bills, institutions of credit, and insurance companies, concessions may be granted by the colonial government in ordinance."

Only one bank, De Curaçaosche Bank, has been created under colonial ordinance and is controlled by the government. The article quoted does not imply that a bank can not be created or established without concession granted by colonial ordinance. "Corporations aggregate," mercantile firms, and individuals may include banking business in their commercial operations without being subject to the control of the legislature or of the executive. Even notes and coins were issued by private individuals in former years of currency confusion, but such practice would undoubtedly no longer be tolerated by the government.

Willemstad, the port and principal city of the island of Curaçao, and also the colonial capital and commercial center, has about 14,500 people. Land tax is being paid on the island on an estimated value of approximately \$3,000,000, but the market value is supposed to be much higher. No land tax is being paid on government properties, churches, cemeteries, schools, almshouses, hospitals, and similar buildings if not used for recreation purposes.

The colony of Curaçao is not self-supporting; the expenditures of the government exceed the income by about \$270,000 per annum, this deficit being made up by the Dutch Government.

In the budget for 1919 the income was estimated as follows (Curaçao florins converted into dollars at 2.50):

Import duties.....	\$98,760	Export duties.....	\$14,800
Land tax.....	24,720	Pilotage.....	24,050
Income tax.....	31,100	Contribution for pensions.....	16,000
Extra income tax.....	14,000	Other sources.....	73,674
Postal service.....	11,400		
Curaçao bank.....	11,149	Total.....	408,553
Excise duties.....	89,100		

The following are the banks in the colony:

The Curaçao Bank, a government institution, established in 1828.

The Savings Bank and Pawnshop of Curaçao, a "corporation aggregate," established in 1849.

The Curaçao Mortgage Bank, a "corporation aggregate," established in 1875.

The Postal Savings Bank, a government institution, established in 1904.

Maduro's Bank, a "corporation aggregate," established in 1916.

Hollandsche Bank voor West-Indie (see below).

It is reported that in the near future a combination in the Netherlands will establish a bank at Curaçao with branches in Dutch Guiana and in other countries.

The Curaçao Bank was created to contribute to the progress of the colony. The bank has the exclusive right to issue bank notes. It discounts promissory notes and bills of exchange which are indorsed by at least two responsible persons; draws, purchases, and sells drafts; grants loans to promote agriculture, industry, and the raising of cattle (such loans to be guaranteed by good security); grants loans guaranteed by mortgage on real properties on the island of Curaçao (such loans not to exceed 60 per cent of the value of the property given in the mortgage); grants loans guaranteed by products of agriculture, merchandise, gold, and bullion, for not over three months and not exceeding two-thirds of the value of the security.

The bank, as agent of the colonial government, furnishes the money required for the expenditures of the government.

The rules provide that the bank shall not participate in any commercial operations, industry, or other business, and that it shall not buy any bonds, goods, movable or immovable, or merchandise if it is not to avoid losses on loans granted.

The administrator of finance in the colony is the president of the bank; besides, there are four directors appointed by the governor.

The bank notes are legal tender in the colony. The bank has recently been authorized to issue up to \$400,000 in notes. The net profit of the bank is for the colonial government.

The Hollandsche Bank voor West-Indie, whose head office is at Amsterdam, opened a branch office at Curaçao on August 11, 1919. This bank does a general banking and exchange business, discount-

ing drafts and making advances on exports, etc. Following the armistice this banking institution formulated the policy of establishing foreign branch banks, a branch being established in Surinam, Dutch Guiana, another in Caracas, Venezuela, and still another in Barranquilla, Colombia, with an agency in Maracaibo, Venezuela, to take care of the important trade with the Maracaibo Basin, the western Andean region of Venezuela, and the Cucuta district of Colombia, all tributary to the port of Maracaibo.

The island of Curaçao, of which the port of Willemstad is the commercial and financial center, furnishes about 70 per cent of the exports of the colony (that is, of all the Dutch West Indian Islands) and about 80 per cent of the imports are distributed there. During and since the war approximately 75 per cent of all business has been with the United States. New York foreign-exchange quotations rule in the Curaçao market, as do New York price quotations on articles and products of export from Curaçao.

THE PORT OF WILLEMSTAD.

The chief asset of Curaçao and, in fact, of the islands of the Dutch West Indies, is the harbor of Willemstad. Easily approachable from the sea and connected with the Inner Basin, called the Schottegat (where an entire fleet might lie at anchor in complete protection), by a narrow but deep and straight channel, the harbor is one of the best, if not the best, in the entire Caribbean Sea. Used in the old days of the Spanish Main as a rendezvous for pirate fleets, it has long been a port of call and transshipment, exports being collected from Colombia and Venezuela for forwarding to the United States and Europe by ocean freight. During the war Willemstad became an important depot for coffee, cacao, and hide shipments from the Caribbean coast and Lake Maracaibo region of Venezuela, the products being stored and held here awaiting more favorable shipping and market conditions. Large profits in these commodities were made during 1919 and the first half of 1920. Shipments were again pouring into Willemstad during the fall and winter of 1920-21, and every warehouse was being filled with coffee, hides and skins, cacao, and divi-divi, which were stored for better prices, following the decline in the market late in 1920.

The Red "D" Line of steamers from New York make Willemstad the headquarters for transshipment to and from Maracaibo in Venezuela, and the Royal Dutch Mail Line maintains a small steamer here which plies between the port and Maracaibo, handling cargo for transshipment, as there is only 12 feet of water over the bar at the entrance to the channel leading to Lake Maracaibo.

After steamer traffic was renewed following the war, Curaçao again became a port of call and coaling station for all Dutch vessels and for steamers of the Italian and Spanish lines which make the Caribbean run regularly.

Since the erection of the Royal Dutch Shell petroleum refinery, the port is now one of call for fuel oil—Dutch, French, Danish, Norwegian, American, and British steamers putting in for fuel. The Standard Oil Co. has recently established a fuel-oil supply station for ocean vessels. On account of the shallow entrance to Lake Maracaibo, near the shore of which the Venezuelan oil wells are

located, and the good protected harbor and abundance of cheap and efficient labor at Curaçao, the port was selected as the site for the large refinery of the Dutch Shell Group. For the same reasons, an American company has been interested in a plan to establish here large storage facilities for molasses, to be brought over in small vessels from Venezuela.

One of the most important industries is that of the schooner trade. Small wooden schooners are built at Willemstad, the lumber being imported from the United States, as well as all other fittings and materials for shipbuilding. Nearly 100 of these schooners call Curaçao their home port and are seen in every port of the Caribbean. During the war this trade was very prosperous, because of the shortage of ocean tonnage and the demand for transshipment of cargoes of coffee, hides, etc., from Venezuela and Colombia. During 1917 the Curaçao Trading Co. launched a 300-ton schooner and Maduro & Sons started the construction of a 700-ton vessel, the largest yet attempted on the island. In 1921, another similar schooner was completed for the same firm to be operated in the Maracaibo trade. These wooden vessels are well built, well designed and rigged, well kept up, and handled in a very expert manner. It was noted by the writer, however, that the carpenters placed the butts of all planking on the frames instead of breaking the joints between the frames and using a butt-strap inside between frames.

Schooners are built on order for Cuba, Porto Rico, Colombia, Venezuela, and other Caribbean ports. There are no statistics to show the extent and value of the shipbuilding industry, but several hundred men are constantly employed in building and repairing small wooden vessels. About three small schooners are built each year on the island of Bonaire, the materials being usually imported through Curaçao.

Since the island does not produce sufficient foodstuffs to support the population, the people are dependent upon the shipping trade, the new oil refinery, and emigration to Cuba for the sugar season.

A comprehensive account of the port of Willemstad, covering 19 manuscript pages and giving full details of the harbor, pilotage, coaling and bunkering, stevedoring, piers, docks and warehouses, steamer schedules, and other commercial and merchant-marine data, has been submitted in connection with this report and will be loaned to interested persons who apply to the Bureau of Foreign and Domestic Commerce, mentioning file No. 46318.

INDUSTRIES AND RESOURCES.

LIVE STOCK.

The following statement gives the stock of cattle in the Dutch West Indies in 1918:

Islands.	Horses.	Asses.	Mules.	Cattle.	Goats.	Sheep.	Swine.
Curaçao.....	321	2,215	91	1,400	25,065	7,075	1,412
Aruba.....	81	866	31	64	6,285	2,615	1,563
Bonaire.....	67	800	15	65	14,980	1,677	282
St. Martin.....	125	3	13	847	175	282	152
St. Eustatius.....	59	213	35	441	252	107	239
Saba.....	14	1	.....	146	417	182	267
Total.....	667	4,088	185	2,963	46,174	11,938	3,925

Beef cattle for local consumption, as well as quantities of lard, are imported from Coro in Venezuela.

FISHING.

Aruba and Bonaire export fish to Curaçao for local consumption. The export of dried fish to foreign countries is of little or no importance.

SALT INDUSTRY.

Curaçao, Aruba, Bonaire, and St. Martin produce considerable quantities of salt, which is exported. The other Windward Islands (Saba and St. Eustatius) do not produce any salt. The estimated annual production of the Leeward Islands is as follows: Curaçao, 100,000 barrels (of $3\frac{1}{2}$ bushels per barrel); Aruba, 5,000 barrels; Bonaire, 100,000 barrels.

The salt is produced by means of evaporation by the heat of the sun in open salt pans formed in natural overflow places along the sea and shallow lagoons. None of the estates are gathering salt to full capacity at present because of the low prices offered. The opportunities to market the product at a reasonable price are not many in normal times. Formerly \$1 or even more has been received per barrel of salt, but not very long ago 20 cents was the average price received. Competition with the Colombian and Venezuelan coast producers is felt.

PANAMA-HAT INDUSTRY.

One of the principal industries of the islands is the manufacture of an imitation Panama hat, the "soyate" palm being imported from Venezuela and Colombia and the weaving being done by hand in the homes of the people by women and children. The government and private institutions have schools to teach hat weaving. The price of the staple hat is about \$1.20 per dozen, and the annual production approximately 130,000 dozens. In 1918 the value of the hats exported to the United States amounted to \$164,150. Prior to the war the output found a ready market in England, but this market was closed after 1914. The product soon found a market in the United States, and exporters state that they can not get enough hats to fill the demand.

"CURAÇAO" LIQUEUR.

The famous "Curaçao" orange is cultivated on the island, the tree and fruit both being very small. The peel is prepared for export to the Netherlands for the manufacture of the "Curaçao" liqueur. One firm in Willemstad also engages in its manufacture, making a specialty of this product and importing from Porto Rico and Venezuela the rum and sugar that enter into the ingredients. At that stage of development of the fruit when the rind contains its maximum quantity of oil the fruit is picked and cut into quarters; these quarters are then dried and pressed into half-barrels for shipment to the Netherlands, where the material passes through the distillation process for the manufacture of the liqueur.

MINING AND MINERALS.

Mines of rock phosphate are located at Santa Barbara and are operated by a British company, which was forced to curtail its

output during the war on account of the shortage of ocean tonnage but is now exporting its normal production of about 6,000 tons per month to the British market.

Curaçao has a very rich phosphate mine lying at the seaside in a bay accessible to vessels of large tonnage. The mine is said to contain a large deposit of high-grade material, but dissension among the stockholders and the difficulties of shipment during the war handicapped development. The company is now preparing to make shipments.

Saba has sulphur mines, but these are lying idle, possibly because there is no moorage for vessels on the island.

Aruba has gold and phosphate mines. British companies tried to work the gold mines, but they never paid, and a local company is now operating, although, through lack of the necessary materials for extraction, the work had to be suspended during the war. Some years ago the Aruba Phosphate Co. was dissolved. It is said that phosphates are still available in paying quantities, but not of high-grade material.

The emigration of labor to Cuba during the period of high sugar prices has crippled development in mining on the islands.

AGRICULTURE.

The agricultural resources of the islands are not large: Shallow top soil is found only in spots, and the lack of sufficient rain and the protracted seasons of drought cause prospects to be very unfavorable for agricultural development. Corn is produced, but not in sufficient quantity to meet the demands of the population of the islands, and large cargoes have to be imported from Venezuela. Other foodstuffs, such as flour, etc., are imported from the United States. Schooners returning from Venezuela and Colombian coast ports bring in bananas, plantains, coconuts, potatoes, casaba, beef cattle, and lard.

Of the Windward Islands, St. Martin and St. Eustatius export annually about \$5,000 and \$10,000 worth of cotton, respectively. On the Leeward Islands experiments are being made with sisal and coconuts. Motor plows have recently been introduced.

Divi-divi, the pod of which contains a high percentage of tannin, and aloes, used for medicinal purposes, are grown on the islands, but no attempt has been made at cultivation of these plants on any large scale, though the aloes fields (natural plantations) are regularly worked in the season. The production of these articles is small.

The year 1914 was a very unfavorable one, particularly for the Windward Islands. The harvests were total failures and the people entirely dependent upon imports of foodstuffs. Aruba, Bonaire, and the outlying districts of Curaçao also suffered and work was scarce on account of the curtailment of shipping. Many of the Aruba workmen formerly found employment in the banana fields of Santa Marta, Colombia, but cutting was partially suspended during the war, on account of the lack of tonnage for transportation of the fruit to market. The Netherlands assisted with contributions in money, and the colonial government issued foodstuffs to the needy to relieve the situation. The year 1915 was also bad on account of the protracted drought, but conditions were better in 1916 and have since improved. The erection of the oil refinery at Willemstad, the stimulus given

shipbuilding during the war, and the high wages secured in the Cuban cane fields were of great benefit to the colony. Often there is not enough water for live stock when dry seasons are prolonged.

MARKETS FOR SPECIFIC CLASSES OF MERCHANDISE.

AMERICAN FLOUR, CORN MEAL, AND LARD.

Prior to the war flour was imported exclusively from the United States, but during the latter part of 1917 it was necessary to import some from Colombia and from Chile, and arrangements were made for supplies from Argentina. Imports of flour from the United States that year were 500,000 pounds less than in 1916, but the value was \$51,000 greater. Corn meal, which is the staple food of the people of the colony, was always imported from the United States prior to 1917. In that year only about 3,375,000 pounds came from the United States, though the normal annual import and consumption is about 7,200,000 pounds. The difficulty encountered in securing sufficient meal from the United States and other countries made it necessary to import small mills with which to grind corn purchased in Venezuela and Colombia. Imports of corn rose from 13,000 bushels in 1913, of which about half came from the United States, to 81,000 bushels in 1917, and the amount has since increased, coming almost entirely from Venezuela.

Lard formerly came almost exclusively from the United States. Difficulty in securing supplies caused the amounts imported to fall from 294,663 pounds in 1913 to 172,339 pounds in 1917, the supply being made up from Venezuela and Colombia, two countries which also formerly imported lard from the United States, but which now have sufficient for domestic demands and for small exports to the West Indies and Panama. Butter, oleomargarine, and cheese imports from the United States are increasing, and the goods are competing favorably with the European articles formerly most used.

MEATS, CANNED GOODS, ETC.

Salt meat, pork heads, codfish, hams and bacon, etc., suffered during the war on account of the lack of sufficient supply. Normal imports amount to 120,000 pounds of salt meat, 210,000 pounds of pork heads, and 115,000 pounds of codfish.

European canned goods were used exclusively before the war, and American canned foods were substituted with great hesitation when they had to be imported on account of inability to secure the usual supply from Europe, especially from France and Holland. Previously only the cheaper grades of American canned goods were known, and it was the common impression that all American tinned products were of poor quality. The enforced use of the American product during the war has corrected this impression, and Curaçao is now a good market for American goods of this class.

The colony uses about 800,000 pounds of potatoes annually, 300,000 pounds of onions, and about 225,000 pounds of rice. Some rice is now being brought over from Venezuela. About 33,000 gallons of beer is sold, now coming almost entirely from the Netherlands. The wine consumption is about 8,500 gallons.

MANUFACTURED GOODS, DRUGS, AND CHEMICALS.

The total imports of manufactured goods (not including those of iron or steel) into the colony fell from \$240,000 in 1916 to \$200,000 in 1917, but the imports from the United States decreased only by \$4,000. Owing to the higher prices and the limited buying power of the people, adversely affected by crop and industrial conditions, the total quantity of manufactured products fell off considerably until 1919, although the total value was about the same. American cotton prints, notions, fancy goods, etc., are some of the lines that have replaced European goods in this market, and it is believed that they will continue to be acceptable during post-war competition.

Drugs and chemicals came from Germany and the Netherlands before the war, but now come exclusively from the United States. Although there is general satisfaction with the quality and price of American goods in this line, physicians in Curaçao seem to prefer European drugs, and the indication is that local drug and medicine importers may return to European markets eventually.

BUILDING MATERIALS—MACHINERY.

Lumber, cement, and other building materials are imported from the United States, with the exception of brick and tiling, which come from the Netherlands. Some tiling for flooring is now manufactured locally. Imports of cement are steadily increasing, and the Government plans the erection of a new customhouse, post office, and other buildings in which considerable material will be used. English and Swedish cement is now a strong competitor in this market, the trade being divided about evenly, at present, although prices of Swedish cement are lower than those of the American product.

The value of machinery imports reached \$300,000 in 1916 and 1917, but fell to \$173,000 in 1919, of which \$145,000 worth came from the United States. All the machinery and materials used in the construction of the oil refinery came from the United States. There is a limited market for pumping machinery, gasoline engines, motor-boat engines, and agricultural implements.

MOTOR VEHICLES.

The excellent roads of Curaçao attract automobiles to the island, and particularly to the capital, Willemstad, where a third of the population is located. The low rainfall and the nature of the hard soil make roads easy to construct and maintain, and the entire island can be covered by automobile. The white population of Curaçao numbers only about 2,000 people, living chiefly in Willemstad. In May, 1917, there were 140 cars in the city, making 1 for every 14 persons of the white population. Importations since that time are shown below. The motor cars most in demand in Curaçao are the low and medium priced models of American make. There are no European cars on the island. Comparatively few motor trucks are used, as the products of the interior are very scant and all the warehouses and stores either front on the wharves or are located within a block or two of the water front, at most.

The following table shows the exports of motor vehicles, parts, and tires from the United States to the Dutch West Indies:

Years.	Commercial cars.		Passenger cars.		Parts.	Tires.	Motor cycles.		Total value.
	Num-ber.	Value.	Num-ber.	Value.			Num-ber.	Value.	
Fiscal year 1913-14.....	1	\$595	13	\$9,605	\$2,754	\$746	1	\$150	\$13,850
Fiscal year 1916-17.....	2	2,095	32	19,191	6,052	7,386	2	368	35,092
Fiscal year 1917-18.....			12	7,345	4,707	9,034	3	904	22,080
Calendar year 1919.....	3	3,095	13	7,369	5,435	10,390	1	300	26,589
Calendar year 1920.....	18	8,542	69	67,376	8,913	23,321	1	387	108,539

In January, 1921, a new company established a motor-bus service, using four American trucks of a well-known make, equipped as passenger busses. Only the eastern portion of the city is served, because the heavy vehicles can not cross the swinging boat bridge which connects the two parts of the town divided by the harbor channel. The service was immediately popular, as providing a rapid and cheap means of transportation for the residential section and the suburbs.

There are about 30 American cars operated for hire in Willemstad, the rates being 7 florins (\$2.80) per hour. These cars afford a means of rapid transit in and about the city, and many beautiful trips can be taken to the outlying beaches, old forts, and farms, including the ostrich farm, one of the sights of Curaçao. The trip around the inner harbor is well worth while.

PETROLEUM.

As early as 1914 it was thought that the development of petroleum in Venezuela would produce in time an increase in the business of Curaçao. The producing fields are located near the shores of Lake Maracaibo in Venezuela, the greater part of this oil would have to find its way out of the country by way of Maracaibo, and, as that port is inaccessible to vessels of more than 12-foot draft, the excellent harbor at Curaçao became the most logical place for refining and transshipment. Another factor considered was the convenience of the harbor for fueling ocean vessels plying in the Caribbean trade.

By the end of 1917 the plant of the Curaçao Petroleum Co. belonging to the British group of the Royal Dutch shell interests, was about completed and refining had commenced with supplies of crude oil from the Maracaibo field of the Caribbean Petroleum Co. and from the Tampico fields of Mexico. Thus far about \$2,000,000 has been spent on this refinery, American skilled labor being employed in its erection and practically all of the machinery and materials used in construction coming from the United States. About 1,100 native laborers have been steadily employed since 1914 on the project, the operating force now being reduced to 500 men. Two thousand tons of crude petroleum are refined in 24 hours, a 20 per cent extraction being obtained from the heavy Venezuelan crude oils used.

The plant is located in the Schottegat, or Inner Basin of the harbor, about 2 miles from Willemstad, the location being a sort of

peninsula of the mainland, with excellent deep-water wharf space and mooring ground around practically three sides of the plant.

Four British monitors used along the coast of Belgium during the war have been converted into shallow-draft tankers and ply between the refinery and San Lorenzo on the eastern shore of Lake Maracaibo with crude oil from the wells of the Caribbean Petroleum Co., the refining company controlling the export product of the producing company. The Caribbean Petroleum Co. also operates several wooden barges in this traffic, and supplies of crude and refined petroleum are sent along the Venezuelan coast to Puerto Cabello and La Guaira.

Steamers prefer to take their supply of fuel oil at Willemstad from the refinery (because special grades and gravities can be obtained there), instead of fueling at the two Venezuelan ports mentioned.

During the war the refining company was handicapped in its operations on account of its inability to obtain means of transportation for the needed supplies of crude oil from the Venezuelan wells. Machinery for the manufacture of tin cans for gasoline and kerosene arrived from the United States in the early part of 1920, and the plant has been producing 5,000 five-gallon cans daily. Supplies are sent to all the West Indian ports and to the north coast of South America, as well as to Europe—principally to England and the Netherlands. A steadily increasing number of vessels call at the port for fuel oil. The Standard Oil Co. has recently completed a tank station just inside of the entrance to the Inner Harbor for the purpose of supplying fuel oil to steamers on the Caribbean run. A new wharf is being constructed by Maduro & Sons for the company, to facilitate the handling of vessels at the two large tanks.

Up to the end of the first six months of 1920 the wells of the Caribbean Petroleum Co. at San Lorenzo had produced a total of approximately 163,000 metric tons of crude oil, most of which went to Curaçao.

A number of additional oil areas are being prospected and drilled in Venezuela by British and American companies. Petroleum development is also going forward in Colombia in several sections, and it may be predicted that, in the course of a year or two, pipe lines will be constructed directly to the coast, thus avoiding the difficulty of the shallow entrance to Lake Maracaibo.

COMMERCIAL SIGNIFICANCE OF CURAÇAO.

The commercial importance of the harbor of Willemstad has long been recognized by the Dutch authorities. In 1914 funds were assured for improvement work, which resulted in the dredging of the entrance channel and in the deepening of the water front along the inner channel which leads to the Schottegat. In 1916 the Dutch Minister of Colonies made a strong recommendation before the Dutch Parliament for the equipment of the harbor as a world port in anticipation of after-the-war commercial movement of shipping. One hundred thousand dollars was secured for the improvement of the harbor on Aruba Island, and engineers were sent out to make complete surveys, plans, and estimates of the contemplated improvements. The wireless station was enlarged and equipped for long-dis-

tance work, although it can not be used for commercial messages on account of the exclusive concession of the French Cable Co., which connects with Caracas, in Venezuela, via La Guaira and the West Indies at Martinique and thence to American and European points.

The colonial government is favorably disposed toward development and commercial projects, as the greater number of the people depend upon the activities of the port for their living. Taxes are very low, and goods for transshipment pay no import duty or other charges. All port dues are made as small as possible.

The harbor frontage in the channel is owned by the colonial government, the Curaçao Trading Co., and S. E. L. Maduro & Sons. The best frontage in the Inner Harbor is owned by the Curaçao Trading Co., S. E. L. Maduro & Sons, and the Curaçao Petroleum Co. (Bataafsche Petroleum Maatschappij). There is an island in the Inner Harbor owned by the Maal family, which has deep water at one end suitable for wharfs, landings, or storage-tank space. Since the erection of the refinery all water-front property has increased greatly in value.

The Windward Islands of Saba, St. Martin (southern half), and St. Eustatius are unimportant commercially and do their trading with the neighboring islands.

Curaçao and the port of Willemstad form the commercial center of the Leeward Group, comprising Curaçao, Bonaire, and Aruba, the last two islands buying all supplies in Willemstad. Here are located all the stores of the importers, the warehouses, banks, etc., as well as the residences of the white population of the colony, numbering 2,000 persons. The population of Willemstad is about 15,000.

Located on the southern side of the island some 16 miles to the west of Point Cannon, the town is situated on both sides of St. Anna Bay (as the entrance channel to the inner harbor is called) and fronts on the ocean on either side. The channel runs directly inland, in direction almost north and south, the length being approximately 1 mile, and opens out into the Schottegat, or Inner Bay. The channel is about 700 feet wide and has 30 feet of water at keel width along all of the wharves. It is navigable for the largest steamers, vessels of over 12,000 tons running up into the Schottegat with ease and safety. The surrounding country is fairly level, with high hills in groups to the east toward Santa Barbara, where the phosphate mines are located. Ancient forts protect both sides of the entrance from the sea. About 9 miles to the east is Caracas Bay, the site of the old quarantine station and an old Spanish fort with round tower, underground passages, etc. The bathing beach here is one of the best on the island and the location is extremely picturesque, abounding in great rocks, etc., of volcanic formation. The site has been spoken of as a location for a winter resort hotel.

Two or three story buildings line the waterfront of the channel, the material being that used in all Spanish-American countries and the construction similar, with the exception that the peaked Dutch roof with steps has been added instead of the flat roof such as is usually found in Latin America. The commercial part of the town is located on the eastern side of the channel called Pundo, the western side being known as Otrabanda, mainly devoted to hotels and residences and a few small retail stores. The suburbs of Pundo are called Pietermaai and extend along the coast to the east. Just inland

is a shallow bay which serves as a harbor for small schooners and boats and is called the Waaigat. Residences continue to the north of the Waaigat, and the waterfront is lined with wharves and warehouses. In all, the city presents an extremely interesting and attractive appearance, and to say the least, a very novel one, combining, as it does, much of Holland with a strange admixture of Latin America.

It is a meeting place for commercial travelers journeying between the mainland of Colombia and Venezuela and the West Indies. The port is a clearing house of commercial information and gossip of the Tropics, from Cuba, Panama, Colombia, Venezuela, and as far east as Trinidad. The Red "D" Line of steamers touch here to and from New York and Maracaibo and other Venezuelan ports. Nearly all European steamers touch for coal, fuel oil, or for freight and passengers to and from Colon. It is a port of transshipment and steamer connections. Hotel accommodations are good—better, in fact, than on most of the mainland—and are being rapidly improved to meet the increasing demand for better quarters and service.

Because of the proximity of the Colombian and Venezuelan coast and the well-organized commercial houses of Curaçao, there exist both the opportunity and the desire for trade; but the 30 per cent surtax placed by the Venezuelan Government on imports from the West Indies (aimed principally at Curaçao, Trinidad, and Porto Rico, but more especially at Curaçao, because it is a free port), prevent the merchants from extending their wholesale trade to Venezuela on a large scale, despite the fact that the greater part of Venezuela's export products from the western part of the country tributary to the Maracaibo Basin are transshipped at Willemstad.

EXTENT AND CHARACTER OF TRADE.

The merchants of Willemstad are mostly Jews of Portuguese and Spanish extraction, descendants of the traders who settled there in Spanish colonial times. While competing among themselves, they are all interrelated by marriage and closely connected by partnerships and form a compact and conservative commercial unit. This fact should be borne in mind by American travelers representing American export houses when dealing with Curaçao importers.

There are 31 importing firms in Willemstad, of which about 12 are large, operating on a capital of \$150,000 to \$200,000. Jobbers and wholesalers as we know them in the United States are unknown in Curaçao, although there are several native resident manufacturers' agents representing important manufacturers and export commission houses of the United States and taking care of the local business to a very considerable extent.

Merchants are both retailers and wholesalers and import their own stocks either through export commission houses in Europe and the United States, or, to a lesser extent, directly from manufacturers, especially from those who maintain foreign sales departments and periodically cover the Caribbean territory with salesmen. As elsewhere in Latin America, cotton textiles form the largest portion of the purchases of merchandise, constituting about 60 per cent of the total.

The stores are well lighted; goods are attractively displayed; stocks, while not so large as in Caracas, Bogota, or Barranquilla, are much more extensive as regards selection of articles and merchandise; the quality averages higher; and the clothing, dry goods, and dress goods assortment is better. More attention is paid to the strictly retail trade, which is the largest item with the importers of Curaçao, than to the wholesale trade. Excellent stocks of the best American merchandise are kept on hand and frequently renewed. The average traveler can purchase many articles here that are lacking in the stores of Venezuela and Colombia. People from the mainland, seeking steamer connections here for the West Indies, Panama, Trinidad, or Caracas do considerable shopping and outfitting here, ladies especially looking upon Willemstad as an emporium for dry goods, silks, dress goods, etc.

Before the war, in 1913, the United States supplied a fraction less than 47 per cent of the total imports of merchandise and manufactured articles, the rest coming principally from Germany, the Netherlands, France, England, and Spain. In 1914 the United States furnished a fraction over 53 per cent of all imports, the imports from the United States increasing by \$97,000 in value, while those from European countries fell off materially. The following articles were not furnished to any appreciable extent by the United States prior to the war: Butter, cheese, candies and chocolates, candles, canned goods, cigars and cigarettes, clothing (ready-made), drugs and chemicals, enameled ware, glass and glassware, leather goods, liquors, manufactures of iron and steel, paints, perfumes, pottery, rice, soap, sugar, and wines. In the majority of cases the small share of the United States in these imports was due to the fact that the cost of production in the countries of origin was lower than in the United States. Gradually, as conditions became more difficult during the war, the entire trade gravitated to the United States, with the exception of certain well-known lines of French perfumes and soaps, Dutch beer, and French and Spanish wines and liquors.

It can be stated that, all other things being equal, merchants of Curaçao prefer to buy in the United States, as the better facilities of communication and the shorter distance enable them to receive their stocks more quickly, and this relieves the necessity for long credits. There is no prejudice of any kind against American goods at present nor any preference for those of any other country.

The principal difficulty in the way of the extension of American trade prior to and during the first years of the war were the lack of credit facilities equal to those offered by Europe and the difficulty in presenting new goods to the trade, caused by the lack of wholesalers and brokers. The establishment of better banking facilities with New York connections and the renewal of traffic, together with the better knowledge of the market on the part of American exporters, have done away with these drawbacks. It is to be supposed that some of this trade will return to Germany later and that England will continue to hold its share of the textile trade, but the United States will continue to hold in the future the present volume of business. The trade can be easily taken care of by salesmen making the north coast of Colombia and Venezuela or coming down from Cuba or the West Indies. No delays are experienced, as steamer

connections are the best and a few days spent in Willemstad will well repay the small additional expense for travelers handling commercial lines.

Curacao furnishes about 70 per cent of the exports of the colony and takes about 80 per cent of all imports. The largest item of export shown in the Government statistics is coal, imported entirely from the United States. Deducting the coal supplies sold to ships, the United States took, in 1914, 34 per cent of the exports of the island, which was greatly in excess of the proportion taken by any other country. The most important articles of export of which the United States formerly took but little were divi-divi, hides, and phosphates; of these, the former two are now exported more largely to the United States, while the production of phosphates, curtailed during the war, goes to England.

During the war the colony not only suffered from the general dislocation of shipping, on which the port depended to a great extent, but there were also two bad years on account of protracted droughts. During 1916, 1917, and 1918, the Curaçao schooner trade was active, and the high freights earned by the vessels aided in relieving the situation, together with the work on the new oil refinery of the Royal Dutch Shell. Immense quantities of coffee were stored for shipment after the close of hostilities, being brought over principally from the Maracaibo, Coro, and Puerto Cabello regions of Venezuela. The straw-hat industry, upon which many of the people depend, had gone through a period of depression, on account of the closing of the English market, before the trade in this article was established with the United States in 1917. Many of the workmen emigrated to Cuba, attracted by the high wages being paid in the cane fields.

After the armistice Curaçao felt the benefit of the high prices obtaining in New York for exports from South America, and large profits were made on coffee, hides and skins, tanning materials, etc., which had been collected from Venezuela during the period of depression. The renewal of normal shipping, with the addition of new lines of steamers, the activity in the oil business, and the general commercial activity, all made for an era of great prosperity and profit.

When the decline came in the latter part of 1920, Curaçao merchants were not overstocked, as was the case on the mainland of Venezuela and Colombia. They had no great stocks of staple goods such as textiles, because they depend mainly on their local and transient retail trade, and their general policy is that of small stocks often renewed, with assortments to best suit the demands of their peculiar trade. The general condition of panic at the end of 1920 found them with no heavy stocks of coffee, cacao, or hides on hand and only with easily salable stocks of goods in their stores, for which there is a growing local demand created by the increasing general prosperity of the people.

All the European steamship companies, with the exception of the Hamburg-American, have now reestablished their old service, in some cases (like that of the Royal Dutch West India Mail Co.) with additional vessels and improved service. A new Italian company is in the trade, and there are two new American lines. One, the New

Orleans & South American Steamship Co. (W. R. Grace & Co.), provides bimonthly service with New Orleans for freight and passengers, while the Caribbean Steamship Co. operates a line of ships chartered for freight between New York and Caribbean points and maintains a small steamer at Curaçao for transshipment service with Maracaibo.

FOREIGN-TRADE FIGURES.

STATISTICS OF IMPORTS.

The following table shows the value of articles imported into Curaçao in 1919 and 1920, and also the value of imports from the United States in the same years:

Articles.	1919		1920	
	Total im- ports.	Imports from United States.	Total im- ports.	Imports from United States.
Agricultural implements.....	\$259	\$259	\$270	\$270
Automobiles.....	14,688	14,688	34,376	33,215
Bacon.....	11,897	10,815	29,420	26,610
Bay rum.....	4,122	4,122	6,260	6,260
Beans and peas.....	39,303	14,041	55,990	9,554
Beer and malt extracts.....	9,842	4,278	22,206	1,972
Bicycles.....	457	457	860	816
Biscuits.....	10,044	7,771	20,083	6,242
Butter.....	45,140	27,927	51,158	15,385
Candles.....	2,339	2,250	7,597	4,720
Candies and chocolate.....	12,860	10,796	33,482	23,010
Canned goods.....	71,582	61,340	114,155	86,213
Cattle.....	22,126	806	26,768	.....
Cement.....	8,360	4,173	16,040	12,546
Cheese.....	21,740	6,418	45,620	388
Cigars.....	9,104	4,397	17,664	3,450
Cigarettes.....	45,767	5,559	76,792	18,732
Clothing.....	4,236	2,178	16,220	9,306
Coal, bituminous.....	137,186	132,501	387,427	337,200
Coffee.....	22,236	.....	30,904	2,204
Copper sheeting.....	5,489	4,209	17,068	8,700
Corn.....	140,967	.....	91,062	4,770
Corn meal.....	121,600	90,706	238,308	236,952
Drugs and chemicals.....	37,588	20,684	38,030	17,476
Enameled ware.....	5,093	5,000	6,378	3,900
Fish:				
Cod.....	3,024	3,000	3,662	3,668
Others.....	6,971	.....	6,529	.....
Flour.....	196,576	196,525	362,852	362,848
Fruit:				
Fresh.....	13,795	814	14,670	1,004
Preserved.....	2,633	2,624	5,830	5,060
Jams.....	943	900	3,224	1,500
Furniture.....	7,716	5,257	14,936	9,962
Glass and glassware.....	5,698	4,092	8,932	3,950
Goats.....	68	.....	418	.....
Gold and silver ware.....	640	640	1,023	670
Hats:				
Straw.....	13,001	7,284	21,406	7,450
Others.....	1,407	1,151	1,684	250
Hay.....	86	86	820	625
Hogs.....	118	.....	.....	.....
Horses.....	40	.....	40	.....
Ironware (hardware).....	6,789	3,992	2,376	946
Lard.....	29,588	25,228	51,524	11,320
Leather, sole and others.....	26,316	7,087	30,892	9,621
Liquors:				
Gin.....	5,460	.....	19,075	.....
Liquors.....	5,460	.....	19,075	.....
Rum.....	41,014	25,200	58,230	56,408
Others.....	16,682	1,230	32,644	1,370
Machinery.....	173,105	145,734	398,087	156,470
Manufactures (general).....	331,274	255,856	611,228	318,144
Matches.....	5,323	1,879	7,215	2,022
Meat:				
Dried.....	8,979	.....	7,802	.....
Salt.....	3,266	2,969	12,154	11,616

Articles.	1919		1920	
	Total im- ports.	Imports from United States.	Total im- ports.	Imports from United States.
Mineral water.....	\$864	\$347	\$988	\$150
Oleomargarine.....	7,372	7,014	21,686	11,056
Oil:				
Crude.....	140,157	.....	1,656,062	92,720
Gasoline.....	5,672	5,672	9,682	9,682
Kerosene.....	10,968	10,968	3,375	3,375
Linseed.....	6,784	5,518	11,424	5,490
Others (lubricating).....	20,026	17,777	41,632	38,306
Onions.....	8,958	4,227	10,040	3,984
Paints and varnish.....	13,044	6,536	11,090	1,526
Perfumery.....	10,898	4,347	46,630	5,880
Pianos and organs.....	4,792	4,372	1,980	1,754
Potatoes.....	16,903	12,213	25,912	7,195
Pottery and porcelain.....	11,785	2,786	13,185	2,960
Rice.....	17,434	13,453	13,594	11,321
Rope (cordage).....	19,745	19,649	25,836	19,290
Sacks, empty.....	29,933	20,780	22,986	22,140
Sheep.....	286	.....	210	.....
Shoes.....	30,839	29,361	116,500	105,210
Soap.....	22,038	10,042	27,832	9,273
Starch.....	12,292	918	9,984	800
Straw for hats.....	.....	.....	51,440	.....
Sugar.....	120,427	8,605	183,607	5,670
Tar, pitch, and rosin.....	1,954	1,954	1,405	1,405
Tea.....	4,117	2,516	4,138	2,542
Tiles for roofing.....	.....	.....	100	54
Tobacco.....	21,125	18,462	25,732	23,098
Vinegar.....	1,621	.....	976	925
Wines.....	12,918	1,592	26,382	40
Wood:				
Planks.....	41,906	39,812	51,156	48,817
Hardwoods.....	17,252	4,547	13,604	7,618
All other articles.....	407,571	364,606	779,155	322,888
Total.....	2,826,657	1,744,997	6,294,200	2,595,000

EXPORTS FROM CURAÇAO TO UNITED STATES.

The exports from Curaçao to the United States in 1919 and 1920 are shown in the following table, as invoiced at the American consulate at Curaçao:

Articles.	1919		1920	
	Quantity.	Value.	Quantity.	Value.
Aloes..... pounds..	1,376,441	\$111,930	1,133,046	\$98,819
Cocoa..... do.....	.....	.....	2,610	1,280
Coffee..... do.....	7,318,836	1,426,952	4,642,037	1,002,561
Copaiba balsam..... do.....	.....	.....	83,485	21,722
Chicle..... do.....	12,990	123	.....	.....
Corn..... do.....	.....	.....	.....	6,750
Divi-divi..... pounds..	19,654,934	454,700	4,360,645	106,442
Gasoline..... gallons..	.....	.....	1,560	1,390
Hats:				
Panama..... number.....	.....	.....	858	2,127
Palm..... dozen.....	800	394	480	422
Straw..... do.....	92,643	164,150	93,597	227,477
Hides, cattle..... pounds..	106,901	25,837	2,312	1,489
Household effects.....	.....	1,677	.....	2,000
Metals, old..... pounds..	.....	.....	14,709	1,245
Molasses..... do.....	.....	.....	1,100	836
Skins:				
Goat..... do.....	1,324,602	777,011	63,455	34,453
Sheep..... do.....	26,508	6,322	10,646	4,321
Sisal fiber..... do.....	77,654	7,467	98,421	7,755
Sugar..... do.....	7,652,516	663,577	19,651,279	2,473,742
Simamba bark..... do.....	.....	.....	5,350	110
Tortoise shell..... do.....	66	337	286	2,535

Articles.	1919		1920	
	Quantity.	Value.	Quantity.	Value.
Woods:				
Box.....		\$50,089		\$69,373
Curaire.....		1,148		424
Ebony.....		5,328		6,586
Mahogany.....				20,464
Red oak.....				1,608
Roble.....		1,952		20,455
Vera.....		2,702		2,534
Wool.....		6,968		350
All other articles.....		5,435		3,438
Total.....		3,744,099		4,122,197

The value of exports to Porto Rico was \$29,693 in 1919 and \$39,578 in 1920.

SHIPS ENTERING CURAÇAO.

During 1919, 580 steamers, with a total tonnage of 780,790, and 1,066 sailing vessels, with a tonnage of 92,328, entered Curaçao. Of this number, 222 steamers and 37 sailing vessels were American. The tonnage of the former was 243,330, and of the latter, 10,208.

TEXTILE TRADE.

Prior to the war about one-third of all textiles imported came from the United States. The rest came from England, France, and Spain. English cotton prints enjoyed practically a monopoly of this market. As the war advanced, imports of textiles from France and England decreased and those from the United States and Spain increased. Spain was furnishing cotton knit goods, principally stockings and underclothing, but these imports gradually fell off and the entire supply of cotton and silk goods was coming from the United States by the end of 1917. Fancy dress goods of American make are found especially satisfactory by the importers, who predict that the United States will hold this market for nearly all lines of textiles.

The market has no peculiar requirements, and packing may be of the ordinary kind used for ocean shipment. The usual cotton goods for tropical markets are used. American ready-made, lightweight clothing is becoming increasingly popular. Cheap cotton prints constitute the principal item of the textile trade, as fully 85 per cent of the people are Negroes.

The duty on cotton goods and other textiles is 3 per cent ad valorem, port of shipment. The usual terms to responsible houses are 90 days date. The parcel-post service can be used to advantage by American firms in building up an attractive export business with Curaçao in notions, novelties in dry goods, haberdashery, ladies' wear, and articles of distinctive style. This means has been found especially useful by the merchants for keeping on hand an attractive display of new and seasonal merchandise of high value and good margin of profit for their retail trade.

TARIFF.

The tariff of the colony contains few and simple provisions, and the general policy is one of noninterference and constructive help to

trade. The following table shows all pertinent provisions of the tariff:

Classification.	Import duty.	
	Per cent.	Florins.
Potatoes.....100 kilos.....	.....	1.00
Earthenware and porcelain, except tiles and bricks.....value.....	10	.....
Automobiles.....do.....	10	.....
Biscuit (fine).....do.....	10	.....
Butter.....100 kilos.....	.....	7.50
Liquor spirits.....hectoliter, 50 per cent alcohol, at 15° C.....	.....	1.00
Glass and glassware.....value.....	10	.....
Candles.....1 kilo.....	.....	.10
Cheese.....100 kilos.....	.....	5.00
Coffee.....do.....	.....	4.00
Corn.....64 liters.....	.....	.10
Margarine.....100 kilos.....	.....	5.00
Corn meal.....90 kilos.....	.....	.25
Flour, rye and wheat.....do.....	.....	.50
Metal hardware; enamel ware.....value.....	10	.....
Furniture.....do.....	10	.....
Pianos, organs, etc.....do.....	10	.....
Petroleum, refined.....100 liters.....	.....	.80
Beef cattle.....per head.....	.....	7.50
Rice.....100 kilos.....	.....	1.00
Carriages, vehicles.....value.....	10	.....
Bicycles.....do.....	10	.....
Cigars.....do.....	20	.....
Cigarettes.....100.....	.....	.10
Sugar:		
Brown.....100 kilos.....	.....	1.00
Refined (white).....do.....	.....	2.00
Confectionery and chocolate.....value.....	10	.....
Confiture fruits.....do.....	10	.....
Fireworks, etc.....do.....	20	.....
Tobacco.....do.....	10	.....
All other goods not mentioned above.....value.....	3	.....

No duty is charged on goods for transshipment in or out of the port. No duties are imposed on:

Ballast, as sand, rubbish, and the like not having a commercial value.

Ships not destined to remain in the colony.

Wrecks of vessels pertaining to the colony.

Empty barrels, bags, and those objects made especially for transporting goods, provided these have been used.

Articles and baggage carried by travelers for their personal use.

Machinery, implements for agricultural purposes, artesian wells, electrical power and illumination, aqueducts, docks, refineries, mine-exploitation work, etc.

Machinery and equipment for telegraph and telephone lines, etc.

Straw and fiber for hat making, hides and skins, flags and shields for consulates, coal, mineral oils, etc.

ACCOMMODATIONS FOR TRAVELERS.

There are two principal hotels in Willemstad. The Hotel Americano, located on the west side of the channel, of three stories and containing 40 rooms, charges \$3 to \$4 per day, with meals. The outside rooms facing the channel are preferred by travelers, as these receive day and night the full benefit of the trade winds. A new chef has been brought from Porto Rico by the management, following the policy of general improvement of accommodations for travelers at Curaçao.

The Hotel Washington is located on the east side of the channel, is not on the waterfront, and hence does not get the cooling effect of the trade winds to the fullest extent. The building is an old residence

and few of the rooms are as desirable as those of the Hotel Americano across the channel. However, the Washington is operated in connection with the restaurant of the same name and a specialty is made of good food—the best in any public place of Curaçao.

There are several other hotels, but of lower class and not frequented by the average traveler.

CABLE AND WIRELESS SERVICE.

The colonial government has installed a high-power wireless station at Willemstad, the power of which has recently been considerably increased, but this service is not available for commercial use except to ships at sea, on account of the exclusive concession given some years ago by the Government to the French Cable Co., which maintains lines to Caracas (Venezuela), Martinique, Haiti, and thence to New York and European points. Rates of this company are based on \$1 per word, including address and signature, from Willemstad to New York. The line is an old one. Service is often interrupted by breakage at some place.

MONOGRAPHS AND TRADE LISTS RELATING TO VENEZUELA.

DEPARTMENT OF COMMERCE MONOGRAPHS.

In addition to the information contained in this handbook, it should be noted that a number of monographs previously published by the Bureau of Foreign and Domestic Commerce include reports with regard to specific phases of trade, finance, or industry in Venezuela. These are mentioned below. The publications are for sale, at the indicated prices, by the Superintendent of Documents, Government Printing Office, Washington, D. C., and by the district and cooperative offices of the Bureau of Foreign and Domestic Commerce.

Banking Opportunities in South America, by William H. Lough. Special agents series No. 106; 1915; 156 pages. Price, 20 cents.

Investments in Latin America and the British West Indies, by Frederic M. Halsey. Special agents series No. 169; 1918; 544 pages. Price, 50 cents.

Lumber Markets of the West and North Coasts of South America, by R. E. Simmons. Special agents series No. 117; 1916; 149 pages. Price, 25 cents.

Markets for Construction Materials and Machinery in Venezuela, by W. W. Ewing. Special agents series No. 144; 1917; 57 pages. Price, 10 cents.

Trade of the United States with the World, 1914 and 1915 (fiscal years). Miscellaneous series No. 38; 1916; 247 pages. Price, 20 cents.

Trade of the United States with the World, 1916 and 1917 (fiscal years). Miscellaneous series No. 63. Part 1, Imports; 1918; 112 pages; price, 10 cents. Part 2, Exports; 1918; 317 pages; price, 20 cents.

Trade of the United States with the World, 1917 and 1918 (fiscal years). Miscellaneous series No. 78. Part 1, Imports; 1919; 112 pages; price, 10 cents. Part 2, Exports; 1919; 346 pages; price, 25 cents.

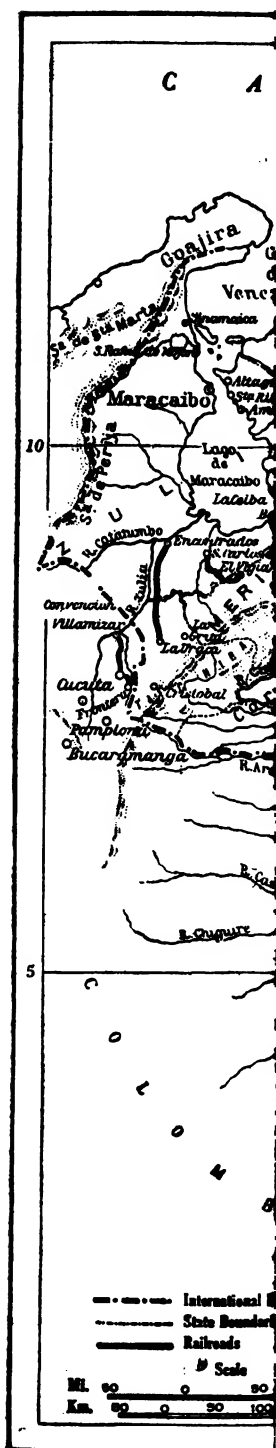
Trade of the United States with the World, 1918 and 1919 (calendar years). Miscellaneous series No. 106. Part 1, Imports; 1920; 103 pages; price, 10 cents. Part 2, Exports; 1921; 456 pages; price, 50 cents.

One should mention also "Commerce and Navigation of the United States," an annual publication giving in great detail the trade of the United States with all the countries of the world, as well as the Supplements to Commerce Reports, which contain the annual reports of the American consuls.

TRADE LISTS AVAILABLE.

A great many names of importers, exporters, dealers, agents, and other persons and firms connected with the commercial activity of Venezuela have been obtained in recent years by various representatives of the United States Government. These names are now on file in the Commercial Intelligence Division of the Bureau of Foreign and Domestic Commerce. Numerous trade lists have been prepared for distribution, arranged on the basis of the commodities handled. These lists show the character of business conducted by each firm—that is, whether wholesale, retail, commission merchant, or agent—and they are starred, to indicate the relative size of each firm in its community, by one, two, or three stars. Information is

also available concerning the capital, organization, and commercial activity of each of these Venezuelan houses. The lists are furnished to American business men upon application to the Bureau of Foreign and Domestic Commerce or any of its district or cooperative offices. The inquirer should state definitely the kind of list that he desires; if he is concerned with the market for a particular commodity or class of articles, he should be careful to make a specific statement to that effect.



INDEX.

	Page.		Page.
Acosta district, petroleum concession	101	Anglo-Saxon Petroleum Co., petroleum interests	95
Advertising, effective methods	412	Angostura bark, Ciudad Bolívar district	322
Advertising matter, customs treatment	402	Anzoátegui State, extent of territory	146
Agents, ability to cover territory	404	Apure River, description of river and tributaries	281
necessity for care in selection	404	Aragua de Barcelona, position and trade relations	146
Agricultural machinery, field for		Araya Peninsula, position and products	154
American sales	47	Architecture, Caracas	119
general review	45	Area, administrative divisions, Venezuela	19
solution for problem of increasing production	32	islands of Dutch West Indies	432
tractors	30, 45, 248	States in Maracaibo district	181
Agriculture, Ciudad Bolívar district	294	Aroa, copper mines	79, 257, 259
Dutch West Indies, general review	443	Artistic development	122
governmental efforts for improvement	44, 75	Aruba Island, gold and phosphate mines	443
Maracaibo district, general account	200-211	Asphalt, location of deposits	79
produce for Caracas market	170	resources of Maracaibo region	213
Puerto Cabello and Valencia district, general account	245-257	Atures Rapids, barrier to steamer communication	282, 283
summary of principal products	48	Automobiles, imports, Venezuela	354-356
survey of agricultural investments	69	market, Dutch West Indies	445
zones of production	43	market, Venezuela	354-357
Aigrette plumes, exports	328	public, Caracas	28, 123
industry in Ciudad Bolívar district	324-328	<i>See also</i> Motor trucks.	
Altagracia, agriculture, fishing fleet	189	Bags and sacks, market	416
Altitude of principal cities	20	Balsam of copaiba, exports	322
Amazonas Territory, general survey	281-284	production, Ciudad Bolívar district	321
American Magnesite Mining & Manufacturing Co., claim, Margarita Island	90	Balata, exports	317
American Carbon Co., magnesite claim, Margarita Island	90	production, Ciudad Bolívar district	314-318
American Mercantile Bank, Ciudad Bolívar agency	329	Banco Comercial de Maracaibo, operations	224, 378
Maracaibo and Tovar branches	223, 224	Bank of Caracas, operations	376
savings department	382	Bank of Maracaibo, operations	224, 378
service in receiving shipments	168, 406	Bank of Venezuela, operations	374
Americans, position in commercial life	22	Banks, American Mercantile Bank	168, 223
Amparo Mining Co., operations	303	activity in Maracaibo district	222-225
Amusements, Caracas district	28	Banco Comercial de Maracaibo	224, 378
Valencia	239	Bank of Caracas	376
Andes Mountains, general topography	9	Bank of Maracaibo	222, 223, 224, 378
Maracaibo district	183	Bank of Venezuela	374
		City Mortgage and Rural Credit Bank	75
		Ciudad Bolívar	329
		Curaçoesche Bank	438, 439

	Page.		Page.
Banks, Deschanel International Corporation	378, 382	Cable service, Curaçao	456
Dutch West Indies	438	Venezuela	7
general discussion, Venezuela	374-386	Cacao, exports, Puerto Cabello	255, 256
Hollandsche Bank voor West-Indie	378, 439	general review of production	55
lists of institutions	374	imports by United States from Venezuela	57
National City Bank	223, 329, 382	production in Maracaibo district	205
Royal Bank of Canada	223, 329	production in Puerto Cabello and Valencia district	255
Barber Asphalt Co., petroleum interests	95	Cagua, road to San Fernando de Apure	132
Barcelona, coal deposits	79, 148	Canadian-Venezuelan Ore Co., operations	152, 306
description of city	146	Candy, factories in Caracas	173
iron-ore deposits	79	Canned goods, imports, Venezuela	419
road to Soledad	156	market, Dutch West Indies	444
Barinas, description of town	241	market, Venezuela	417
iron-ore deposits	79	Cano Colorado, road to Maturin	157
location, temperature	237	trade figures	164
population	236	Capatariá, tobacco production	242
Barquisimeto, copper deposits	79	Capital, mining companies	82
description of city	241	railway lines	342
industries	262	Carabobo Oilfields (company)	102
number and character of firms	274	Carabobo, copper deposits	79
population, elevation, temperature	236	Carabobo State, distribution of population	235
road to Carora	271	Caracas, commercial position	118, 166
road to Tucuyo	271	commercial territory tributary to city	145
Barrancas, packing house advocated	110	companies listed on bourse	178
trade figures	331	description of city	119-124
Beans, exports, La Vela	250	location and physiography	118
production of castor beans in Valencia district	256	manufacturing industries	172-178
production of tonka beans in Ciudad Bolívar district	319	market for agricultural products	170
Bella Vista, petroleum deposits	92	number of persons in commercial lines	179
Bermudez Asphalt Lake	79, 92, 100	number of persons in trades	180
Bermudez Co., petroleum interests	100	number of professional men	179
Bills of lading, requirements	396	number of small shops and factories	179
Bolívar district, petroleum concession	98	overland route to Ciudad Bolívar	294
Bolívar Oilfields (company)	102	rainfall	15
Bolívar Railway, operations	268	road to Guatire	130
relation to copper mines	244	road to La Guaira	130
Bolívar State, general survey	285	road to Ocumare del Tuy	130
Bonaire Island, building of schooners	441	road to Valencia	130
Bourse, Caracas, companies listed	178	Caracas & La Guaira Railway, general description of line	124
Branger family, manufacturing interests	263	Caracas Electric Light Co.	124
Breweries, Caracas district	174	Carache, products of surrounding country	192
location, Venezuela	115	Carenero, general description of port	142-144
Maracaibo	221	imports and exports	144
Bricks and tiles, manufacture at Maracaibo	222	Carenero Railway, general description of line	142
British-Controlled Oilfields, petroleum interests	99	Cargo, amount transported by railways	343-345
British Equatorial Corporation, petroleum interests	102	total movement on railways	337
British nationals, position in commercial life	22	Cariaco, road to Carupano	157
Buchivacoa, oil field	99	Caribbean Coal Co., concession for railway, Carrasquero to Castilletes	214, 215
Budget, national, 1920-21	42		
Building materials, market, Dutch West Indies	445		
Bureau of Commercial Policy, trade-promotive efforts	414		

	Page.		Page.
Caribbean Petroleum Co., amounts		Ciudad Bolívar, position as rubber	
paid to Government.....	81	port.....	309
petroleum interests, general ac-		trade relations with United	
count.....	95	States.....	331
products handled at Curaçao....	103	Climate, Caracas.....	119
tanks at Puerto Cabello.....	243	Ciudad Bolívar district.....	284
Carib Syndicate, petroleum interests..	98	Curaçao.....	434
Caroni Falls, water-power scheme....	288	general character, Venezuela....	15
Carora, road to Barquisimeto.....	271	llanos.....	16
Carriages, public, Caracas.....	28, 123	Maracaibo district.....	16, 184
Carriages and carts, manufacture....	115	Puerto Cabello and Valencia dis-	
Carupano, commercial position.....	155	trict.....	234
general description of port....	161-163	temperature, mean annual, cities	20
imports and exports.....	163, 164	temperature, variations.....	15
relation to fishing industry....	113	Clothing. <i>See</i> Wearing apparel.	
road to Cariaco.....	157	Clubs, Maracaibo.....	188
road to Rio Caribe.....	157	Coal, concessions granted in 1918....	81
Castilletes, proposed coal port....	215, 217	east of Barcelona and in Paria	
Catatumbo River.....	183	Peninsula.....	152
Cattle, areas suitable for industry....	106	Falcon State production.....	259, 261
Ciudad Bolívar district.....	296	location of deposits, Venezuela....	79
exports.....	109	Maracaibo district deposits....	214-217
feed available on plains.....	108	Naricual fields, general descrip-	
foreign investments.....	110	tion.....	148-152
hides, exports, Puerto Cabello		Unare mines.....	150
and La Vela.....	266	Coast Range Mountains, Carenero....	144
outline of industry's develop-		general account.....	10
ment.....	106	La Guaira.....	135
Puerto Cabello and Valencia		"Oriente" region.....	153
district.....	264-266	Puerto Cabello and Valencia dis-	
Cebadilla, production in Ciudad		trict.....	233
Bolívar district.....	320	relation to Caracas.....	118
Cement, factory in Caracas suburb....	172	Coche Island, trade.....	49
Central Azucarero de La Celba		Coconuts, production in Maracaibo	
(sugar mill), operations.....	208	district.....	210
Central Azucarero del Zulia (sugar		production in Valencia.....	256
mill), operations.....	207	Coffee, cost of production.....	54
Central Gran Vía (sugar company),		exports, all Venezuela.....	51
organization.....	208	exports, Puerto Cabello.....	254, 255
Central Railway of Venezuela, gen-		importance and character of in-	
eral description of line.....	126	dustry.....	50
Chama River.....	183, 184	industry in Maracaibo dis-	
Chemicals, market, Dutch West In-		trict.....	201-204
dies.....	445	prices and grades.....	50, 51, 53, 54
market, Venezuela.....	423	production in Valencia district..	254
Chichiriviche, description of port....	244	shipments from Cucuta region....	200
Chambers of commerce.....	414	Coins, description of Venezuelan....	3
Chicle, exports.....	318, 319	Dutch West Indies currency....	436
production in Ciudad Bolívar		gold and silver in circulation in	
district.....	318, 319	Venezuela.....	380-382
Chinaware, market.....	419	<i>See also</i> Currency.	
Chocolate, manufacture.....	116, 173	Cojedes State, distribution of popu-	
Cicapra district, gold deposits.....	304	lation.....	235
Cigars and cigarettes, factories in		principal towns.....	240
Caracas district.....	62, 115, 174	Colombian Petroleum Co., petroleum	
market for American cigarettes		interests.....	101
problem of standardization in		Colonization, contract made with	
domestic production.....	60	Germans.....	71
use of tobacco by Venezuelan		Germans in Monagas.....	18
industry.....	60	regions suitable for develop-	
Ciudad Bolívar, banking.....	329	ment.....	74
commercial position.....	328	Colon Development Co., petroleum	
description of city.....	286	interests.....	98
extent of commercial district....	278	Colon district, petroleum deposits....	92
foreign trade.....	330	Commerce. <i>See</i> Exports; Foreign	
overland route to Caracas.....	294	trade; Imports; Trade methods.	

	Page.		Page.
Commission houses. <i>See</i> Export commission houses; <i>also</i> Trade methods.		Cumana, commercial position.....	155
Companies, listed on Caracas Bourse.....	178	general description of city and port.....	157-160
listed on Maracaibo stock market.....	221	imports and exports.....	161
registration of foreign.....	411	iron-ore deposits.....	79
Commercial Bank of Maracaibo, operations.....	224, 378	relation to fishing industry.....	113
Commercial Bank of Spanish America, character of business.....	382	road to Cumanacoa.....	156
Commercial lines, representation in Caracas.....	179	Cumana & Carupano Pier & Tramway Co., general account of operations.....	158
Compañía Petrolera del Tachira, petroleum interests.....	101	obligations and rights at Cumana.....	159
Concessions, lumbering, regulations governing.....	75	obligations and rights at Carupano.....	161
Copaiba balsam, exports.....	322	Cumanacoa, commercial position.....	155
production in Ciudad Bolívar district.....	321	road to Cumana.....	156
Copper, location of deposits.....	79	Cumarebo, road to Coro.....	271
mines at Aroa.....	248, 244, 257-259	Curaçao, building of schooners.....	441
Cordage, manufacture of.....	116	characteristics of inhabitants.....	435
Corn, exports, Puerto Cabello.....	248	commercial position.....	49
production and consumption, Venezuela.....	250	foreign trade.....	452
production in Maracaibo district.....	209	general importance.....	447
Corn meal, market in Dutch West Indies.....	444	number of firms and character of trade.....	449
Coro, coal deposits.....	79	petroleum situation.....	103, 446
copper deposits.....	79	phosphate mine.....	443
description of town.....	242	salt production.....	442
iron-ore deposits.....	79	topography and climate.....	434
location, temperature.....	236	Curaçao Petroleum Co., operations.....	103, 446
number and character of firms.....	275	Curaçoesche Bank, operations.....	439
population.....	235	Currency, bank notes, Venezuela.....	3
road to Cumarebo.....	271	Dutch West Indies.....	436
Coro & La Vela Railway, operations.....	269	foreign coins legal tender in Venezuela.....	3
Cotton, factories in Venezuela, general reference.....	115	monetary law.....	4
factories at Caracas.....	174, 175	Venezuelan coins.....	3
factory at Cumana.....	158	<i>See also</i> Coins.	
factories at Valencia.....	251, 262, 263	Customs tariff. <i>See</i> Tariff.	
general review of production.....	64	Cutlery, market.....	425
production in Maracaibo district.....	211	Dairying, Caracas district.....	172
production by States in 1920.....	66	plant at Maracay.....	115
production in Valencia district.....	251	Dairy products, exports from United states to Venezuela.....	422
Cottonseed oil, industry in Valencia district.....	263	imports to Venezuela.....	420
Credits, conditions at Maracaibo.....	225	market.....	420
general discussion.....	405	Death rate of principal cities.....	20
Puerto Cabello and Valencia district.....	273	Debt, national, status of.....	41
terms in Caracas district.....	167, 168, 169	Delta Amacuro, extent and topography.....	279
Cristobal Colon, commercial position.....	156	Deschanel International Corporation, general operations.....	378
trade figures.....	164, 165	interest paid.....	382
Cubagua Island, trade.....	49	Diseases, tropical.....	16
Cucuta, Colombia, description of city.....	198	<i>See also</i> Malaria; Sanitation.	
relation to trade of Tachira State.....	190	Divi-divi, analysis of pods.....	77
trade with Maracaibo.....	199, 200	exports, all Venezuela.....	78
Cucuta Railway, operations.....	199	exports, Maracaibo.....	213
		production and exportation, Coro region.....	257
		utilization of extract.....	77
		<i>See also</i> Tanning materials.	
		Documents, typewritten, registration.....	412
		Drafts, practice in handling.....	380

	Page.		Page.
Drugs and medicines, legal registration, Venezuela.....	411	Exports, coffee, Maracaibo.....	203, 204
market, Dutch West Indies.....	445	coffee, Puerto Cabello.....	254, 255
market, Venezuela.....	423	coffee, Venezuela, total and by ports.....	51
Dry dock, Puerto Cabello.....	248	corn, Maracaibo.....	209
Dutch West Indies, general description.....	482-456	corn, Puerto Cabello.....	248
location, area, population.....	432	Cumana.....	158, 159, 161
Dutch, inhabitants of Curaçao.....	485	Curaçao.....	458
Dyes, plants in Ciudad Bolívar district.....	307	divi-divi, La Vela.....	257
		divi-divi, Maracaibo.....	213
		divi-divi, Venezuela as a whole.....	78, 257
		goatskins, La Vela.....	266
Earthenware, imports.....	420	goatskins, Puerto Cabello.....	265
Education, general review.....	85	gold.....	303, 381
"El Callao" gold mine, operations.....	301	Guanta.....	148
El Dorado Rubber, Balata & Gold Mining Co., operations.....	303	hides and skins, Ciudad Bolívar.....	323, 324
Electric plants, Carupano.....	163	hides and skins, Maracaibo.....	212
cost of lighting service.....	27	Higuerote.....	144
Maracaibo.....	188	La Guaira.....	140, 141, 142
Valencia.....	238	La Vela.....	245, 272
Electric Railway of Valencia, operations.....	238	Maracaibo.....	198, 228
El Encantado, rapids used for generation of power.....	124	meat.....	265
El Isiro, coal production.....	260	petroleum.....	96
El Pilar, coal deposits.....	152	Puerto Cabello.....	272, 273
Embroideries. <i>See</i> Laces and embroideries.		rubber.....	314
Enameled ware, market.....	419	sugar, La Guaira.....	171
Escalante Oilfields (company).....	102	sugar, Maracaibo to United States.....	206
Escalante River.....	183	sugar, Puerto Cabello.....	248
Esmeraldas, mission station.....	282	sugar, Venezuela as a whole.....	67
Eyeglasses, market.....	429	tobacco.....	60, 61
Exchange, conditions and rates, Dutch West Indies.....	437	tonka beans.....	320
effect on trade in Venezuela.....	365, 369	Venezuela as a whole.....	359
transactions at Maracaibo.....	223	<i>See also</i> Foreign trade.	
Experiment stations, agricultural.....	44	Exposition, National, Caracas, 1920.....	414
Explosives, restrictions on importation and use.....	392		
Export commission houses, functions in trade with Caracas district.....	168	Falcon State, distribution of population.....	235
services in Venezuelan trade.....	403	iron-ore deposits.....	79
<i>See also</i> Trade methods.		Fees, consular invoices.....	394
Exports, egrette plumes.....	328	Fertilizers, goat manure, Coro region.....	245
balata.....	317	Fiber, general review of resources.....	76
balsam of copaiba, Ciudad Bolívar to United States.....	322	hat, production in Maracaibo district.....	211
balsam of copaiba, Maracaibo.....	213	native, used for sacks.....	173
balsam of copaiba, Venezuela to United States.....	322	Finances, functions of National Treasury.....	37
beans, La Vela.....	250	funds allotted to road construction.....	350
beans, peas, and corn.....	70	national budget, 1920-21.....	42
cacao, Maracaibo.....	205	position of national finances in recent years.....	37
cacao, Puerto Cabello.....	255, 256	Firearms, restriction on importation.....	392
cacao, Venezuela, total and by ports.....	57	Fishing, Dutch West Indies.....	442
Carenero.....	144	general review of Venezuelan industry.....	113
Carupano.....	158, 159, 164	Flour, market in Dutch West Indies.....	444
cattle.....	109	Foodstuffs, canned goods, market.....	417
cattle hides, Puerto Cabello and La Vela.....	266	cost of food.....	27
chicle.....	318, 319	increase in exports to West Indies.....	250
Ciudad Bolívar.....	330	market, Dutch West Indies.....	444
coconut oil, Maracaibo.....	213	pure-food regulations.....	392

	Page.		Page.
Foreign colonies, Caracas.....	122	Goldfields of Venezuela (company), operations.....	303
position in commercial life.....	22	Government, Dutch West Indies.....	432
Foreign trade, Ciudad Bolívar.....	330	Great Eastern Highway, general description.....	347
Curaçao.....	452	Great Railway of Venezuela, general description.....	127
general discussion, Venezuela as a whole.....	358-373	service at Valencia.....	238
La Vela.....	245	Great Western Highway, general descriptions.....	133, 347
Maracaibo.....	227-232	work in Maracaibo district.....	195
Puerto Cabello and La Vela.....	271-273	Guacipati, commercial position.....	292
<i>See also</i> Exports; Imports.		Guahtaribo Indians, preventing exploration.....	282
Forest products, Ciudad Bolívar district.....	307-323	Guanare, description of town.....	241
Maracaibo district.....	212, 213	population, location, temperature.....	236
Puerto Cabello and Valencia district.....	257	Guanoco, asphalt deposits.....	79
Forests, law on conservation.....	75	petroleum field.....	100
Freight rates, coffee shipments, Maracaibo district.....	195	Guanta, asphalt deposits.....	79
control by steamship combination.....	334	description of port.....	146-148
railway, average.....	336	Guanta, Barcelona, & Naricual Railway, description of line.....	146, 147
French nationals, position in commercial life.....	22	Guatire, proposed railway from Caracas.....	128
Fruits, citrus, in Valencia district.....	257	road from Caracas.....	130
production in Maracaibo district.....	210	Guiana Highlands, extent and topography.....	11, 279
Fuel oil, supply at Willemstad.....	440	geology.....	298
Furniture, manufacture.....	116, 176	Guigüe, description of town.....	240
General Asphalt Co., petroleum interests.....	95, 98, 100	Guiría, merchandise handled at port.....	164
Geology, Ciudad Bolívar district.....	297, 298	Gulf Oil & Transport Co., petroleum interests.....	102
Germans, colonization project in Monagas.....	18, 71	Harbors, Carenero.....	143
commercial interests at Maracaibo.....	225, 226	Carupano.....	161-163
commercial interests at Valencia and Puerto Cabello.....	274	Cumaná.....	159, 160
position in commercial life.....	22, 23	Guanta.....	147, 148
profits of firms in Puerto Cabello district.....	272	La Guaira.....	136
Gibraltar, history, present importance.....	189	Maracaibo.....	198
Glass, factory at Caracas.....	116, 173	Puerto Cabello.....	242, 243
Glassware, imports.....	420	Willemstad.....	440
market.....	419	<i>See also</i> Shipping.	
Gloves, market.....	424	Hardware, imports.....	427
Goajira Indians, Maracaibo district.....	193	market.....	425
pursuit by ranchers.....	216	Hats, manufacture, Valencia.....	262
racial characteristics.....	21	production and importation, Maracaibo.....	222
Goats, Barquisimeto and Coro regions.....	265	market for hats and hat-making supplies.....	427
Goatskins, exports, La Vela.....	266	Panama, production in Dutch West Indies.....	442
exports, Puerto Cabello.....	265	Health, conditions in Maracaibo district.....	185
Gold, coin in circulation.....	380-382	<i>See also</i> Malaria; Sanitation.	
"El Callao" mine.....	301	Hides and skins, cattle hides, exports, Puerto Cabello and La Vela.....	266
exports.....	303	exports, Maracaibo.....	212
history of Guayana fields.....	298	goatskins, exports, Puerto Cabello.....	265
imports and exports.....	381	goatskins, exports, La Vela.....	245, 266
location of deposits.....	79	trade at Ciudad Bolívar.....	323
mines on Aruba Island.....	443	Highways. <i>See</i> Roads and trails.	
production in Ciudad Bolívar district.....	301-305		
specimens encountered in Valencia district.....	259		

	Page.		Page.
Higuerote, imports and exports.....	144	Iron, Imataca deposits.....	305-307
Hollandsche Bank voor West-Indie,		other deposits.....	79
Curaçao branch.....	439	Italians, position in commercial life.....	22
position in Venezuela.....	378		
Homes, poorer classes.....	27	Kapok, Ciudad Bolivar district.....	328
wealthier classes, Caracas.....	25		
Hosiery, kind desired in Caracas district.....	170	Labor and wages, conditions in	
Hospitals, Caracas.....	122	Valencia district.....	247
Hotels and pensions, Caracas.....	122	domestic servants.....	26
Curaçao.....	455	fishing industry.....	114
Maracaibo.....	188	gold fields.....	304
Valencia.....	239	hours per day.....	33
		problem in rubber industry.....	310
		scarcity of workpeople.....	32
		schedule adopted in 1917.....	33
Imataca, iron deposits.....	79, 152, 305-307	La Ceiba Railway, operations.....	218
Immigration, central board.....	17	Laces and embroideries, market.....	428
colonization by Germans.....	18	La Grita, location and products.....	190
European, after war.....	18	La Guaira, general description of	
need of.....	17	port.....	135-138
Imports, agricultural implements.....	46, 47	imports and exports.....	140-142
automobiles.....	355, 356	installation of new aqueduct.....	121
barbed wire.....	46	road to Caracas.....	130
canned goods.....	419	La Guaira Harbour Corporation.....	136, 140
Carenero.....	144	Land laws.....	70
Carupano.....	159, 164	Lands, Government, allotments during 1917-18.....	18
china, glass, and enameled ware.....	420	Language, Dutch, Spanish, English, in Curaçao.....	435
cigarettes.....	64	English, knowledge of by Venezuelans.....	30
Ciudad Bolivar.....	330	Spanish, in Venezuela.....	2
cottonseed oil.....	66	Lara State, distribution of population.....	236
Cumana.....	159, 161	Lard, market, Dutch West Indies.....	444
Curaçao.....	452	La Uraca, terminus of Tachira Railway.....	190
dairy products.....	420	La Vela de Coro, description of port	245
gold.....	381	foreign trade.....	272
Guanta.....	148	Laws and regulations, banking legislation.....	383-386
hardware and steel products.....	427	commercial travelers' regulations.....	401
Higuerote.....	144	customs regulations.....	394
La Guaira.....	140, 141, 142	forests and waters.....	75
La Vela.....	245, 272	governing concessions for lumbering.....	75.
leather.....	178	governing mining.....	80-86
Maracaibo.....	198, 230	highway legislation.....	350
Puerto Cabello.....	271, 272	land laws.....	70
olive oil.....	67	legislation concerning aligrettes.....	325
rice.....	68	monetary legislation.....	4
Venezuela as a whole.....	361	parcel-post imports.....	5, 6, 397
<i>See also</i> Foreign trade; Tariff.		petroleum law.....	103
Indians, Goajira, Maracaibo district.....	192	port regulations at La Guaira.....	139
Goajira, pursuit by ranchers.....	216	railway legislation.....	339
Guatariibo.....	282	sanitary.....	27, 119, 120
Motilonos, in Maracaibo district.....	193	special regulations on certain	
Piaroa.....	233	imports.....	392
racial characteristics.....	21	tariff law.....	339
Insurance, companies at Maracaibo.....	222, 223	trade-mark legislation.....	410
La Previsora, Venezuelan company.....	178	Lead, location of deposits.....	79
Interest, rates paid by banks.....	382	Leather, tanning in Caracas district.....	177
Investments, capitalization of mining companies.....	82	Legislation. <i>See</i> Laws and regulations.	
foreign, in cattle raising.....	110		
oil exploration and drilling.....	105		
railway lines.....	342		
Invoices, consular, requirements.....	394		
Ipecac, Ciudad Bolivar district.....	323		
Irapa, merchandise handled at port.....	164		

	Page.		Page.
Liqueur, "Curaçao".....	442	Maps, Caracas district.....	120
Liquors, internal taxes.....	393	Ciudad Bolívar district.....	278
industry in Caracas.....	178	Curaçao, Bonaire, and Aruba..	433
Live stock, Ciudad Bolívar.....	296	Maracaibo district.....	182
Dutch West Indies.....	441	petroleum deposits.....	93
for Caracas market.....	170	Puerto Cabello and Valencia	
Puerto Cabello and Valencia dis-		district.....	234
trict.....	264-266	Venezuela as a whole.....	458
Living conditions, general review...	24	Mara Oil Exploration Co.....	101
Maracaibo district.....	193	Mara, petroleum deposits.....	92
poorer classes.....	27	Maracaibo, agriculture in district.	200-211
small towns and ranches.....	28	banking and insurance.....	222-225
wealthier classes.....	25	coal company.....	214
Llanos, climate.....	16	companies listed on stock mar-	
geographic position.....	1	ket.....	221
suitability for cattle raising.....	107-109	extent of commercial district....	181
Valencia commercial district....	233	foreign trade.....	227-232
Llanos Road.....	182	forest resources of district.....	212
"Lo Incredible" (gold-mining com-		general description of city....	187-189
pany), operations.....	303, 304	general description of port.....	197
Los Barrosos, petroleum concession..	101	hides and skins in district....	211, 212
Los Ipures, soda mines.....	156	industries of city.....	221
Los Naranjos, hydroelectric plant..	124	petroleum concessions in dis-	
Los Teques, resort near Caracas....	28	trict.....	98, 102
Lumber, production at Maracaibo..	212, 213	railways in district.....	217-221
regulations governing conces-		rainfall.....	15, 185
sions.....	75	temperature.....	184
<i>See also</i> Woods.		trade methods.....	225-227
Macarao River, water supply for		Maracaibo Basin, climate.....	16
Caracas.....	120	Maracaibo Electric Light Co., opera-	
Machinery, market in Dutch West		tions.....	188
Indies.....	445	Maracaibo Electric Street Railway	
road making, Venezuela.....	352	operations.....	188
<i>See also</i> Agricultural ma-		Maracaibo Lake, asphalt deposits..	79
chinery.		topographic description.....	183
Machine shops and foundries,		"Maracaibo lights".....	185
small, in Caracas.....	178	Maracaibo Oil Exploration Co.,	
Macuto, suburb of La Guaira.....	28, 135	petroleum interests.....	101
Macuto Coastline Railway.....	128	Maracay, pastures for cattle.....	109
Magnesite, deposits on Margarita		proposed railway to Turiama	
Island.....	88	Bay.....	338
Magnesite Products Corporation,		road to Ocumare de la Costa..	131
concession on Margarita Island...	90	Margarita Island, fishing industry..	113
Maipures Rapids, description by		magnesite deposits.....	88
Humboldt.....	282, 283	pearl beds.....	89
Malquetia, suburb of La Guaira....	135, 173	trade.....	49
Malaria, general prevalence and		Matches, manufacture of.....	116, 173
effect.....	16	Maturín, drilling for oil.....	95
prevalence at La Guaira.....	135	road to Cano Colorado.....	157
prevalence at Maracaibo.....	185	slaughtering of cattle.....	111
prevalence at Valencia.....	238	Measures. <i>See</i> Weights and meas-	
<i>See also</i> Sanitation.		ures.	
Manufactures, market in Dutch		Meat, exports from United States to	
West Indies.....	445	Venezuela.....	422
Manufacturing, Barquisimeto.....	262	exports from Venezuela.....	265
Caracas.....	172-178	market, Dutch West Indies.....	444
cotton mills.....	251	market, Venezuela.....	420
Cumana.....	157, 158	packing plant, Puerto Cabello..	242, 262
general survey.....	115	Venezuelan salted meat in	
Maracaibo district.....	221	Trinidad.....	111
Puerto Cabello.....	261, 262	Medicines. <i>See</i> Drugs and medi-	
Valencia.....	262	cines.	
<i>See also</i> Sugar (for sugar		Mene Grande, petroleum field.....	95
mills).		Merida city, location and impor-	
		tance.....	191
		rainfall.....	15

	Page.		Page.
Merida Oilfields (company)-----	102	National Fiber and Cordage Factory, production of fibers-----	76
Merida State, copper deposits-----	79	National Match Factory-----	116, 173
geographic description-----	187	Navy yard, Puerto Cabello-----	243
Metric system, importance of using--	3	Negroes, Curaçao-----	435
Minerals, right to prospect and ex- plore for-----	37	position in Venezuelan life-----	22
<i>See also</i> Coal; Copper; Gold; etc.		New Callao Gold Mining Co., oper- ations-----	308
Mining, capitalization of companies--	82	New England Petroleum Co-----	102
Ciudad Bolívar district-----	297-307	New Orleans, trade with Venezuela--	335
Dutch West Indies-----	442	Nirgua, description of town-----	239
formation of companies-----	87	road to Valencia-----	270
general economic significance--	1	North Venezuelan Petroleum Co., petroleum interests-----	101
general survey-----	79	shipping base, road building-----	244
laws and regulations-----	80-86	Ocumare de la Costa, plan for new seaport-----	144, 145
Maracaibo district, general ac- count-----	213-217	plan for packing house-----	109
payments to Government-----	86	road to Maracay-----	131
Puerto Cabello and Valencia district-----	257-261	Ocumare del Tuy, road to Caracas--	130
<i>See also</i> Coal; Copper; Gold; etc.		Oil, coconut, cottonseed, factory at Cumana-----	158
Ministry of Fomento, report on Naricual coal mines-----	151	cottonseed, industry in Valencia district-----	263
Ministry of Public Works, interest in construction devices and machin- ery-----	353	fuel, supply at Willemstad-----	440
purchases for Guanta Railway--	147	Oil fields. <i>See</i> Petroleum.	
road-building program-----	346	Optical goods, market-----	429
study of watershed near Ca- racas-----	121	"Oriente," general description of territory-----	153-156
Miranda Exploration Co-----	101	Orinoco River, description of river and tributaries-----	12, 280
Monagas State, German colonization project-----	18, 71	flood stages-----	284
petroleum concessions-----	102	southern bank, lands for coloni- zation-----	74
Money. <i>See</i> Coins; Currency; Fi- nances.		transportation conditions-----	289-291
Montalban, description of town-----	239	Packing, general statement of re- quirements-----	408
Motatan River-----	183, 184	Paez Exploration Co-----	101
Motilones Indians, Maracaibo dis- trict-----	193	Paper, factory at Caracas-----	115
Motor cycles, shipments from United States-----	355	factory at Maracay-----	115
Motor trucks, market, Dutch West Indies-----	445	Paraiso drive, Caracas-----	121
market, Venezuela-----	354	Parcel post, Dutch West Indies-----	436
<i>See also</i> Automobiles.		general discussion of trade--	370-373
Mountains, Andes-----	9, 183	increased use of service, condi- tions governing-----	275
Coast Range-- 10, 118, 135, 144, 153, 233		regulations governing shipments--	397
Guiana Highlands-----	11, 279, 298	<i>See also</i> Postage.	
Segovia Highlands-----	10, 233	Paria Peninsula, outcroppings of coal-----	152
<i>See also</i> Topography.		petroleum field-----	100
Mucuchies, highest town in Vene- zuela-----	191	Parks, Caracas-----	121
Naricual, coal deposits-----	79, 148-152	Patent medicines. <i>See</i> Drugs and medicines.	
National Cement Factory, oper- ations-----	172	Pañi Concession, petroleum-----	100
National City Bank, agency at Ciu- dad Bolívar-----	329	Pearls, industry at Cubagua, Coche, and Margarita-----	89
branch at Maracaibo-----	223	Federnales, merchandise handled at port-----	164
policy of Caracas branch-----	382	petroleum deposits-----	92, 100
National Dry Dock and Navy Yard, Puerto Cabello-----	243	Penalties, frauds or mistakes under customs regulations-----	399
		Perija, petroleum deposits-----	92, 96
		Perija Exploration Co-----	101

	Page.		Page.
Petroleum, companies engaged in development	95-102	Professions, representation in Caracas	179
concessions in Puerto Cabello district	259	Publications, Department of Commerce monographs on Venezuela	457
contracts made by Federal Executive	81	Public utilities. <i>See</i> Electric plants; Street railways; Telephone service; Water supply.	
exports	96	Puerto Cabello, foreign trade	271-273
Government revenues	81	general description of city and port	242
investments in exploration and drilling	105	manufacturing industries	261
legislation	103	packing house	109
location of oil fields	92	road to San Felipe	270
production for entire country	92	road to Valencia	270
quality of deposits	92, 94	Puerto Cabello and Valencia, extent and character of commercial district	233
situation at Curaçao	103, 446	population of district by political divisions	235
taxes on developments	104	topography and climate of district	233, 234
<i>See also</i> names of companies.		Puerto Cabello & Valencia Railway, operations	266
Pharmaceutical products, regulations governing	392	service at Valencia	238
Phosphate, mines on Aruba Island	443	Puerto Nutrias, point of river shipment	241
mines in Dutch West Indies	442	Purchasing power of population	24
Piaroa Indians, region inhabited	283	"Quina," Ciudad Bolívar district	322
Population, by administrative divisions	19	Racial characteristics, Indian tribes	21
characteristics of Curaçao people	435	Negro element	22
effect of insufficient population	30	Railways, Bolívar Railway	268
islands of Dutch West Indies	432	Caracas & La Guaira Railway	124
principal cities	20	Carenero Railway	142
Puerto Cabello and Valencia district	235	Central Railway of Venezuela	126
racial characteristics in Maracaibo district	192	Coro & La Vela Railway	269
States in Maracaibo district	181	Cucuta Railway	199
statistics for entire country	17	general account of Venezuelan lines	336-346
towns in Maracaibo district	186, 187	Great Railway of Venezuela	127
Port of Spain, Trinidad, transshipment point for Ciudad Bolívar trade	287	Guanta, Barcelona, & Naricual Railway	146
Portuguesa State, distribution of population	286	La Ceiba Railway	218
lands open for colonization	74	line at Guanipa asphalt mines	156
Postage, Dutch West Indies	436	line at Guanoco asphalt mines	156
rates, Venezuela	5, 6	Macuto Coastline Railway	128
regulations governing parcel-post imports	5, 6	Puerto Cabello & Valencia Railway	266
<i>See also</i> Parcel post.		Santa Barbara & El Vigía Railway	219
Potatoes, production in Maracaibo district	210	Tachira Railway	218
Precious metals. <i>See</i> Gold; Silver.		<i>See also</i> Transportation.	
Pregonero, agricultural products	190	Rainfall, Ciudad Bolívar district	284
Prices, egrette plumes	325	rainy season	15
automobiles and trucks	355	statement by months	15
balata	318	Refinery, petroleum, Curaçao	103, 446
coffee	50, 51, 53, 54, 201, 202	San Lorenzo	96
cotton, Venezuelan raw	65	Rents, furnished and unfurnished residences	26
cotton, Valencia district	252	Resorts in Caracas district	28
fish	114	Revenues, from petroleum	81
goatskins	266	statement of national revenues	38, 40
hats	427	<i>See also</i> Finances; Tariff; Taxes.	
principal export products	40	Regulations. <i>See</i> Laws and regulations.	
products of oil refinery	97		
rice	68		
straw braid	428		
sugar, in Caracas market	171		
sugar, effect of prices	209		

	Page.		Page.
Rice, general review of production.....	67	San Fernando de Apure, road to	
imports.....	68	Cagua.....	132
production in Maracaibo district.....	210	San Fernando de Atabapo, description of settlement.....	282
production in Valencia district.....	252	nut plantation in vicinity.....	283
Rio Caribe, commercial position.....	155	Sanitary preparations, importation	
road to Yaguaraparo.....	157	free of duty.....	393
trade figures.....	164	Sanitation, Caracas, measures instituted.....	119
Rio Chico, loading point for agricultural products.....	142	inspection and regulations.....	27
Rio del Oro, petroleum field.....	98	La Guaira, modern improvements.....	135
Rivers, length, navigable course, drainage area.....	14	to combat tropical diseases.....	16
Roads and trails, Caracas district 128-135		Valencia, measures of Branger brothers.....	263
competition of cart roads with railways.....	338	San Juan de los Morros, outlet to llanos country.....	132
Cumana-Carupano district.....	156, 157	San Lorenzo, oil refinery.....	96
effect of road building on markets.....	196	Santa Barbara & El Vigia Railway, operations.....	219
general account, for all Venezuela.....	346	Santa Barbara oil wells.....	99
lists of highways.....	348-350	Santa Rita, goat farming, coconut plantations.....	189
Puerto Cabello and Valencia district.....	270, 271	oil well.....	99
Rope, factory at Caracas.....	173	Santa Rosa, oil well.....	99
Royal Bank of Canada, branch at Ciudad Bolivar.....	329	Sardinate River, petroleum deposits.....	92
branch at Maracaibo.....	223	Sarsaparilla, Ciudad Bolivar district.....	322
Royal Dutch Shell group, petroleum interests.....	95, 98	Sawmill, Carupano.....	163
refinery at Curaçao.....	103, 446	Seboruco, ancient copper mines.....	191
Rubber, exports.....	314	Segovia Highlands, land suitable for fibers.....	76
production in Ciudad Bolivar district.....	309-314	location.....	233
Rubber goods, market.....	430	topography.....	10
Rubio, coffee plantations.....	190	Servants.....	26
Saba Island, sulphur mines.....	443	Sewerage system, Caracas.....	121
Sacks, factory at Caracas.....	173	Shipbuilding, schooners built at Curaçao.....	441
<i>See also</i> Bags and sacks.		Shipping, careless handling of cargo.....	169
Salesmen's routes, Maracaibo district.....	196	Carenero port facilities.....	143
Salt, mine near Merida.....	213	Carupano port facilities.....	161-163
production in Dutch West Indies.....	442	Carupano, shipping movement.....	163
Samples, customs treatment.....	401	Cumana port facilities.....	159
San Carlos (Cojedes), pastures for cattle.....	109	Cumana, shipping movement.....	160
population, elevation, temperature.....	235	Curaçao, shipping movement.....	454
road to Valencia.....	270	effect of war-time restrictions.....	272
San Carlos de Zulia, importance in transportation.....	189	Guanta port conditions.....	143
San Cristobal, capital of Tachira State.....	189	instructions for exporters.....	394
San Cristobal Oilfields (company).....	102	La Guaira figures.....	140
San Felipe, description of town.....	240	La Guaira, lines calling.....	139
population, location, temperature.....	236	La Guaira port facilities.....	136
road to Puerto Cabello.....	270	Maracaibo, steamship service.....	197
San Felix, port on Orinoco River.....	287	Orinoco River.....	289-291
route to Tumeremo.....	291, 292	Puerto Cabello port facilities.....	242
trade figures.....	331	steamship lines touching at Venezuelan ports.....	332-334
San Fernando de Apure, headquarters of cattle company.....	110, 264	Venezuelan Navigation Co.....	165, 166
number and character of firms.....	275	Willemstad port conditions.....	440
		<i>See also</i> Harbors; Steamship service; Transportation.	
		Shoes, market, Caracas.....	176
		production at Maracaibo.....	222
		shops in Caracas.....	175
		shops in Valencia, Barquisimeto, Puerto Cabello.....	262

	Page.		Page.
Shops and factories, small, number in Caracas.....	179	Tanneries, Puerto Cabello.....	261
Silva district, petroleum concession.....	101	Valencia.....	262
Silver, stock in Venezuela.....	382	Tanning materials, general review of resources.....	77
Sinclair Exploration Co., petroleum interests.....	102	Tariff, duties, agricultural equipment.....	46
Skins. <i>See</i> Hides and skins.		duties, bags and sacks.....	416
Soap, factories at Maracaibo.....	221	duties, cigarettes.....	64
factories at Puerto Cabello.....	261	duties, gloves.....	425
factories at Valencia.....	262	duties, meat and dairy products.....	422
manufacture, general reference	115	duties, motor vehicles.....	354, 356
manufacture and importation in		duties, optical goods.....	430
Caracas district.....	177	duties, rubber goods.....	431
Social conditions.....	28	effect of tariff on domestic manufacturing.....	116, 172
Soda, deposit near Lagunillas.....	213	general account of system.....	387-402
mines at Los Ipures.....	156	method of assessing duty.....	5
Soledad, road to Barcelona.....	156	provisions of tariff in Dutch West Indies.....	454
South American Copper Syndicate, mines at Aroa.....	243, 244, 257-259	Taxes, automobiles and trucks.....	357
Southern Oil & Transport Corporation, petroleum interests.....	102	internal, on tobacco and liquors.....	393
Specifications, road building.....	350-352	petroleum developments.....	104
Stamp taxes on drafts.....	383	stamps on drafts.....	383
Steamship service, lines calling at Guanta.....	148	<i>See also</i> Revenues; Tariff.	
lines calling at La Guaira.....	139	Telegraph service.....	6, 7
lines calling at Puerto Cabello.....	243	Telephone service, Caracas.....	124
lines calling at Venezuelan ports.....	332-334	cost of service.....	27
lines calling at Willemstad.....	440	Valencia.....	238
Orinoco River.....	289-291	Temperature, Ciudad Bolivar.....	284
Venezuelan Navigation Co.....	165, 166	Texas Co., petroleum interests.....	102
vessels calling at Maracaibo.....	197	Textiles, market in Dutch West Indies.....	454
<i>See also</i> Shipping; Transportation.		<i>See also</i> Cotton.	
Steel products, imports.....	427	Theaters, Caracas.....	121
market.....	425	Tiles. <i>See</i> Bricks and tiles.	
Stock market, Maracaibo, companies listed.....	221	Toas Island, coal deposits.....	214
Street railways, Caracas.....	123	Tobacco, classes and grades.....	58
Carupano.....	158, 163	internal taxes.....	393
Maracaibo.....	188	production and consumption.....	59
Valencia.....	238	production in Valencia district.....	253
Sucre district, petroleum deposits.....	92	regions of production.....	58
Sucre Oilfields (company).....	102	Tocuyo, road to Barquisimeto.....	271
Sucre State, extent of territory.....	153	Tocuyo River, characteristics, region drained.....	234
Sugar, exports, Maracaibo to United States.....	206	lead deposits.....	79
exports, Puerto Cabello.....	248, 249	navigation.....	271
exports, Venezuela as a whole.....	67	Tonka beans, exports.....	320
industry in Caracas and vicinity.....	171	production in Ciudad Bolivar district.....	319
industry in Maracaibo district.....	206-209	Tools, market.....	425
production in Valencia district.....	249	"To order" shipments.....	167, 168, 396
Sulphur, mines on Saba Island.....	443	Topography, Ciudad Bolivar commercial district.....	278-281
Sun Oil Co., petroleum interests.....	102	coast line.....	9
Syrians, position in commercial life.....	22	Curaçao.....	434
		effect on road building.....	129
Tachira Oilfields (company).....	102	main inland divisions.....	9
Tachira Railway, operations.....	218	Maracaibo commercial district.....	183
Tachira State, geographic description.....	187	mountain groups.....	9
Tanneries, Caracas district.....	177	"Oriente" region.....	153
general reference.....	115	plains.....	11, 14
Maracaibo.....	222	Puerto Cabello and Valencia district.....	233, 234
		river systems.....	12

	Page.		Page.
Torbes River	184	United States, purchases of Venezue-	
Tovar, market center and trading		lan sugar	67
place	191	sales of meat and dairy products	
Tractors, American, in Valencia dis-		to Venezuela	422
trict	248	sales of motor vehicles to Dutch	
increasing use	30, 45	West Indies	446
Trade lists, available at Department		sales of motor vehicles to	
of Commerce	457	Venezuela	354, 355
Trade-marks, procedure in register-		sales of rice to Venezuela	68
ing	410	trade with north-coast coun-	
Trade methods, Caracas district	166,	tries	367
	167, 168	trade with Puerto Cabello dis-	
Ciudad Bolivar	329	trict	276
Curacao	449	Upata, capital of Piar district	292
general discussion	403-415		
Maracaibo district	225-227		
progressive tendencies	30		
Puerto Cabello and Valencia			
district	273-275		
Trades, representation in Caracas ..	180	Valencia, manufacturing industries ..	262
Trails. <i>See</i> Roads and trails.		general description of city ..	287-289
Tramways. <i>See</i> Street railways.		number and character of firms ..	274
Transportation, Caracas city	123	population, elevation, tempera-	
Ciudad Bolivar district	289-294	ture	235
general discussion	332-357	road to Caracas	130
importance in Andean States ..	192	road to Nirgua district	270
Puerto Cabello and Valencia		road to Puerto Cabello	270
district	266	road to San Carlos	270
<i>See also</i> Railways; Shipping;		Valencia commercial district. <i>See</i>	
Steamship service.		Puerto Cabello and Valencia.	
Travel, accommodations at Curacao ..	455	Valencia Electric Co., operations ..	233
conditions in Orinoco Valley ..	294	Valencia Lake, location	233
routes to interior from Mara-		Valera, commercial importance	192
caibo	193	Venezuela Commercial Co., opera-	
Treasury, National, outline of func-		tions	274
tions	37	Venezuela Meat Products Syndicate,	
Trinidad, food products from Ciudad		cattle interests	110, 264
Bolivar district	297	packing plant at Puerto	
trade in tonka beans	320	Cabello	242, 262
use of Venezuelan salted meat ..	111	Venezuelan Falcon Oil Syndicate,	
Trujillo, location and economic im-		petroleum interests	99
portance	192	Venezuelan Navigation Co., general	
Trujillo Oilfields (company)	102	account of operations	165, 166
Trujillo State, geographic descrip-		service at Maracaibo	197
tion	186	service on Orinoco	289
Tucacas, description of port	243, 244	Venezuelan Oil Concessions, petro-	
Tumeremo, route to San Felix ..	291, 292	leum interests	98
Turiamo Bay, plan for packing		Venezuelan Potable Water Co.	120
house	109	Venezuelan Sun (oil company)	102
proposed railway from Maracay ..	338	Venezuela Oilfields Co., petroleum	
		interests	102
Unare, coal mines	150	Venezuela Sugar Co., operations ..	206, 207
United States, advantages in trade		Venezuela Telephone & Electric Ap-	
with Venezuela	170	pliances Co.	124
future of trade relations with		Ventuario River, character of val-	
Ciudad Bolivar	331	ley	283
position in Venezuelan trade ..	2		
purchases of sugar from Mara-			
caibo	206		
purchases of Venezuelan cacao ..	57		
purchases of Venezuelan chicle ..	319		
purchases of Venezuelan coffee ..	52		
purchases of Venezuelan copaiba			
balsam	322		
		Wages. <i>See</i> Labor and wages.	
		Warehouses, La Guaira	137
		Maracaibo	198
		Water power, plan for Caroni	
		Falls	288
		Waters, law relating to	75
		Water supply, Caracas	120
		Water transportation. <i>See</i> Ship-	
		ping; Steamship service; Trans-	
		portation.	

	Page.		Page.
Waxes, vegetable, Ciudad Bolívar district.....	323	Woods, Ciudad Bolívar district...	307-309
Wearing apparel, manufacture and importation at Caracas.....	176	Woodworking, shops at Maracaibo...	221
tailoring and importation at Maracaibo.....	222	Yaguaraparo, merchandise handled at port.....	164
Weights and measures, Curaçao.....	436	Yaracuy State, distribution of population.....	236
Venezuela.....	3	Yaritagua, description of town.....	240
West India Oil Co., petroleum interests.....	102	Yuruary River, gold deposits.....	79
Wharves, La Guaira.....	136	Zambapalo oil well.....	96
Maracaibo.....	198	Zamora district, petroleum concession.....	101
Puerto Cabello.....	243	Zamora State, distribution of population.....	236
Wheat, production in Maracaibo district.....	210	lands open for colonization.....	74
Willemstad, character of port and town.....	440, 448	Zulia Oilfields (company).....	102
Wireless service, Curaçao.....	456	Zulia River.....	183
general account, Venezuela.....	7	Zulia State, coal deposits.....	79
station at Maracaibo.....	188	geographic description.....	186

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